Journal of

COLLEGE PLACEMENT

THE INTERNATIONAL MAGAZINE OF PLACEMENT AND RECRUITMENT

Women — Our Other Great Resource — WALLACE JAMIE

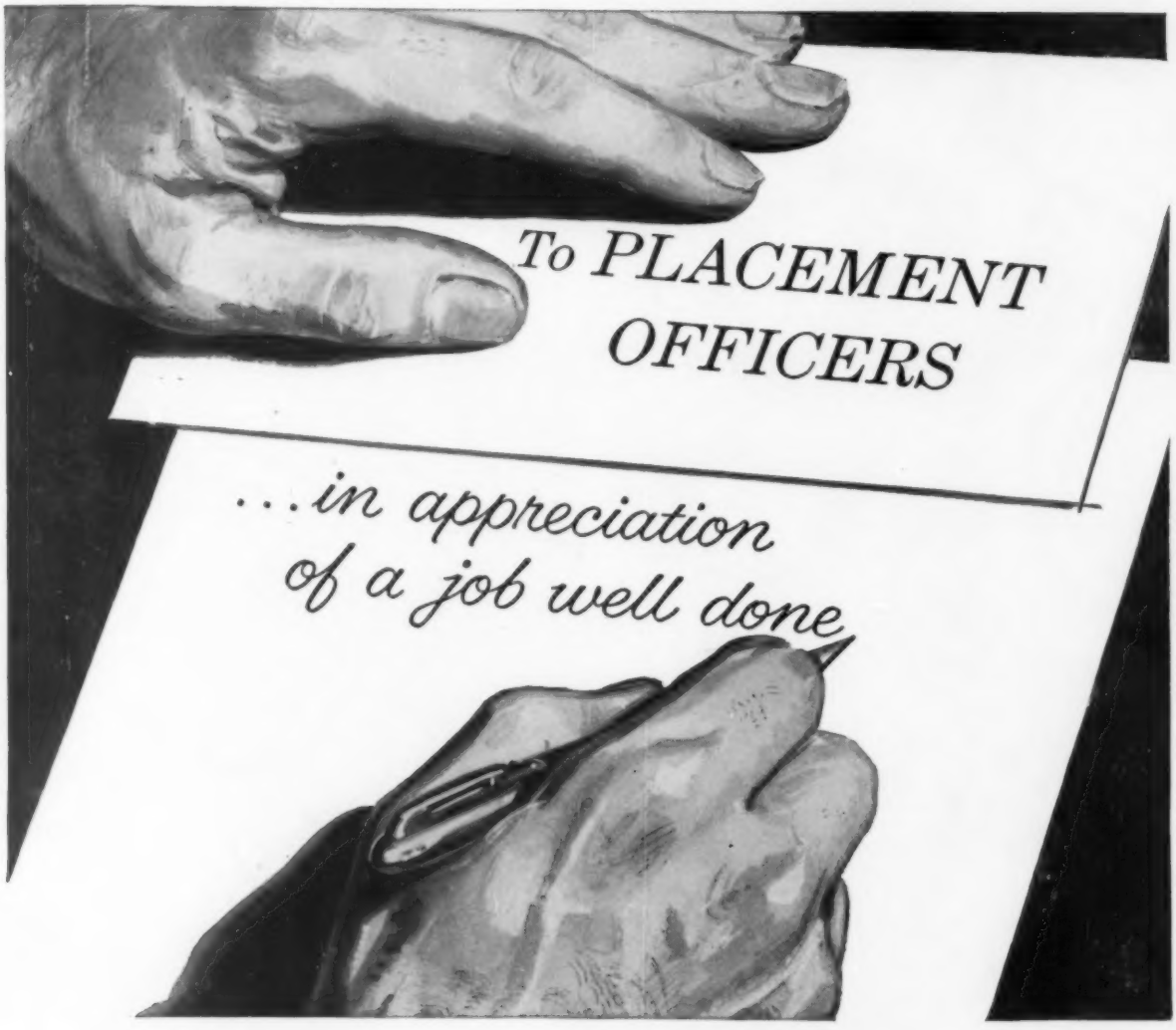
SYSTEMS ENGINEERING: A CAREER PROFILE — WAYNE L. BESSELMAN

THE P & G SUMMER WORKSHOP — A PREVIEW OF INDUSTRY

GULF BUILDS A RECRUITING TEAM: A JOURNAL CASE HISTORY

A PARTNERSHIP IN ENGINEERING EDUCATION — DEAN ELMER C. EASTON

December, 1957



UNITED STATES STEEL appreciates the important contributions which placement officers have made in advising and guiding the graduating college student.

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USS

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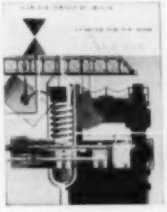

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CITY AND STATE_____

COLLEGE_____

DEGREE_____

DATE OF GRADUATION_____

Yusuf A. Yoler joined General Electric's Missile and Ordnance Systems Department in 1955, after receiving his B. S. in E. E. from Roberts College, Istanbul, Turkey (1949), and his Ph. D. from the California Institute of Technology (1954).

"In a big company, a young man can get to tackle big jobs"

"The thing that has impressed me most in my two years at General Electric," says 28-year-old Yusuf A. Yoler, manager of Aerodynamics Laboratory Investigations, "is the challenging opportunity open to young people here. My field is guided-missile research — the nation's top-priority defense job. Because of the scope of the company's research and development program, I've had the opportunity to work with technical experts in many related fields. And I've seen at first hand the responsibility which General Electric has given to younger men — proof to me that in a big company a young man can get to tackle big jobs."

. . .

The research being done by Dr. Yusuf A. Yoler is significant not only to himself, but to General Electric and the security of the nation as well. At present, the company is participating as a prime contractor on three of the four long-range ballistic missiles programed by the U. S. government. Yoler, who is playing an important role in this work, directed the design and development of the world's largest hypersonic shock tunnel — a device which will "test-fly" missile nose cones at speeds over 15,000 mph.

Progress in research and development — as well as in every other field of endeavor—depends on how well young minds meet the challenge of self-development. At General Electric there are more than 29,000 college graduates, each of whom is given the opportunity to develop to his fullest abilities. In this way, we believe, everybody benefits — the individual, the company, and the country.

Progress Is Our Most Important Product

GENERAL ELECTRIC

Journal of
COLLEGE PLACEMENT

VOLUME XVIII DECEMBER, 1957 NUMBER 2

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■ *Women, according to Wallace Jamie who subjects the working variety to analysis in this issue, can add as well as distract.*

Among the figures (if the expression may be pardoned) which engage Mr. Jamie's attention: 30% of all of the married women in the United States hold jobs; 22 million are now employed; and comprise about one third of the national work force.

Considering these totals and the increasing degree to which women are being trained for high-level decisions, it may be suggested that our "Other Great Resource" is not being given first degree attention in the recruiting field.

The cover illustration has been provided by The Chemstrand Corporation, whose growth in six years of operation owes more than one debt of gratitude to the women who make its nylon and Acrilan fiber production possible.

THE COLLEGE PLACEMENT COUNCIL, INC.

The Journal of College Placement is the quarterly publication of the Council, devoted to the interests of the eight Regional Placement Associations of the United States and Canada and to the placement officers and recruiting officers whom they represent.

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Du Pont competes directly with major producers in all of its basic product lines. In plastics, Du Pont has 18 major competitors; in sulfuric acid, 20; in coated fabrics, 100; in photo chemicals, 16; in explosives, 16; in pigments, 40; and in paint, 1200. Du Pont antifreezes compete with 245 different brands. Of course, aside from direct competition between like products, Du Pont faces competition from many different products serving the same purpose.

To continue to compete successfully, we must be strong in ideas, in talented young men and women. It's these men and women, discovering, producing, improving and selling our products, who enable us to stay competitive.

Your graduates will find themselves in a stimulating atmosphere at Du Pont with time to think, encouragement to contribute ideas and unmatched facilities to produce.

WATCH THE
DU PONT "SHOW OF THE MONTH"
ON TELEVISION

"Glowing wafer" of light (electroluminescence) sheds illumination on the faces of three Westinghouse scientists who helped to develop it. Left to right: Dr. Willi Lehmann (University of Brunswick, Germany); Dr. Henry F. Ivey (University of Georgia, Massachusetts Institute of Technology); and R. W. Wollentin (Rutgers University).

The Light With no Third Dimension

A new source of light is nearing practicality. Called electroluminescence, it comes from a flat surface. By the twist of a knob, you can change the brightness, or even the color, of a room.

Since electric lighting first became practical, only three basically different light sources have achieved widespread use—incandescent, fluorescent, and gas-discharge lamps. Now a fourth basic type—electroluminescence—is nearing practicality. With fewer theoretical limitations than any of its predecessors, it promises to revolutionize lighting and become a practical light source of the future.

In an incandescent lamp, light comes from a single point. In a fluorescent lamp (form of gas-discharge), light comes from a straight line. In electroluminescence, light comes from an area or flat surface. Electroluminescence is light emission from phosphor powders embedded in an insulator, excited by an a-c field.

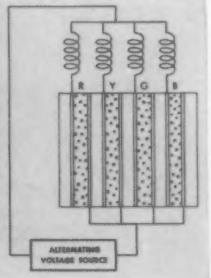
Westinghouse engineers gave the first practical demonstration of this new light source. They lighted an entire room with flat electroluminescent panels on the ceiling and three walls. These panels were one-foot-square flat glass plates about as thick as a window pane and coated with a plastic containing the phosphor. They were topped off by an aluminum conducting coating. Hooked up to a source of power, these plates had a brightness of 100 foot lamberts in their present stage of development.

Since some phosphors have more than one emission band, the color and brightness of electroluminescent lighting can be changed by varying the frequency. It is possible to control the color of a room, and brightness too, simply by twisting a knob. Besides supplying ordinary light, this new light source has other fascinating possibilities. Just one is "picture framing" television. An electroluminescent cell might replace the conventional cathode-ray tube in such a set.

Westinghouse engineers, under the supervision of E. G. F. Arnott (Princeton '28), developed electroluminescent lighting under the name of "Rayescent" lighting. Westinghouse approached the problem, not as a commercial venture, but as a pure research project. Much work remains to be done in this field. It is typical of the pioneering developments undertaken by Westinghouse.

Changing Colors in Electroluminescence

Multicolored panel of one type is made by stacking red (R), yellow (Y), green (G), and blue (B) phosphors. Inductors are used to tune each layer.



Challenging opportunities for the graduate engineer exist in many fields . . . including:

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Course _____ College _____

Mail to Mr. J. H. Savage, Westinghouse Electric Corp., P.O. Box 2278, Pittsburgh 30, Pa.

INSTRUMENT *for the Common Good*

AS President of your College Placement Council, it has been my privilege to attend five of the six regional placement conferences so far held this year. The cordial friendliness with which I have been welcomed at every one has been deeply gratifying, both personally and officially. This editorial, therefore, is, first of all, a sincere expression of appreciation to the many persons who contributed to this friendly atmosphere. It would take scores of personal letters to say "thank you" to all of you.

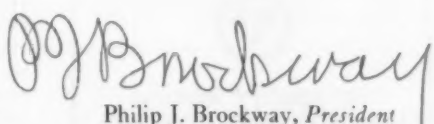
From these conferences two points stand out. In the first place, I was everywhere impressed by the high seriousness with which placement work is regarded by college representatives and recruiters alike. A fine sense of professional responsibility permeates the field. This is a sound and healthy situation. Equally healthy, especially this year in the face of more employment uncertainty than we have met for some time, is the feeling of mutual responsibility toward the student. Certainly if we all strive to work for the best interests of the individual student, we cannot go far wrong in our techniques and procedures, however widely these may differ. While uniformity of method is certainly no measure of professional standing, unity of purpose very possibly may be.

The other comment I would make concerns the regional acceptance of the College Placement Council. I felt everywhere an underlying sense of welcome to the idea of the CPC. Almost without exception, one finds a dislike for the idea of a large national placement organization; at the same time there is a growing sense of national inter-relationship that demands some type of over-all coordination. This the Council provides while still preserving regional autonomy.

Many questions, even some misunderstandings, appeared, as might be expected. Most of these arose from the 1956 change-over from the old Journal Board to the new Council, a change not fully realized by some. However, as soon as the facts were known that the Council is elected entirely from and by the regional associations to coordinate regional activities, to promote projects which go beyond regional limitations, and to give a closer sense of national unity among all placement workers, then the idea of the Council met with approval in nearly all quarters.

Since the Council is the instrument of the members of regional associations, it is the responsibility of all members to offer comment on present activities and to suggest new projects for consideration. Much has been accomplished in a year's time. A greatly improved JOURNAL, the first issue of the ANNUAL, and the publication of *Principles and Practices of College Recruiting* are fine accomplishments. Yet we cannot stand still. This editorial is a sincere request to each of you for suggestions to improve our present activities, and, most particularly, for your ideas on new projects and activities which will make the CPC even more worthwhile.

Your present support of the Council is deeply appreciated; your suggestions for further activities will enable the executive committee to chart a future course of even greater value to all.



Philip J. Brockway, *President*
The College Placement Council

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Offering:

- **Independence & Security**

  In business for yourself, securely backed by proven leadership and guidance.

- **High Income**

  Early prospects of five-figure income. Unlimited growth opportunity in steadily expanding market.

- **Prestige**

  Self-sufficient businessman contributing vital professional service to the community.

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  70 agencies throughout the country offer wide choice of where to work and live.

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Write for information about the business, the company and the job.

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PHILADELPHIA, PENNSYLVANIA

LETTERS

Salary Surveys

St. Louis, Mo.

Sir:

I read with a great deal of interest the article written by Mr. Everett A. Teal, entitled "What Are You Going to Pay?" The article also disturbed me quite a lot because it could be very easily misunderstood.

In Mr. Teal's second paragraph, he states that the average starting salary for technical graduates was around $465 per month in 1957, and will be $485 per month for 1958. Now, this may be true enough in the East, but people from all over the country read your magazine, and we poor people in the Midwest sort of take issue with statements which appear to be all inclusive when maybe they are merely local.

The thing that makes this even more confusing is the fact that in this same issue (October, 1957) the Midwest College Placement Association's Annual Recruiting Survey is published, and on Page 52 the over-all average for technical graduates in 1957 was $436 per month. On Page 59, the over-all average for 1958 for technical graduates is expected to be around $450 per month.

All of us are disturbed about the frightening prospects of inflation. We in industry are trying to hold it down as much as possible—we would appreciate a little help from some of the placement people.

A. W. Moise
Director of Personnel
Ralston Purina Co.

(Until nomenclature and structuring can be agreed upon, surveys and reports will continue to differ. Author Teal was referring to final salaries accepted including "adders" as reported by a considerable number of placement officers. Many surveys use average figures computed from basic salaries without "adders". Others base their averages on "offers" — an entirely different figure than "acceptances." Reader Moise's own MCPA survey (JCP, Oct '57) listed four reasons why its technical averages were probably on the low side. Ed.).

The 1958 Annual

Princeton, N. J.

Sir:

Allow me to congratulate you on the College Placement Annual, 1958. My associate, Gordon G. Sikes, is distributing his supply to the senior class as he interviews them. I have a copy and as Alumni Appointments man in the Princeton University Placement Bureau find it most helpful in dealing with young alumni just returning from the military or endeavoring to change positions.

C. K. Wallace
Alumni Appointments
Princeton University

New Haven, Conn.

Sir:

Our students are getting a great deal of assistance from the Annual and all of you who are instrumental in putting it together certainly deserve our congratulations and profound gratitude.

Stuart H. Clement, Supervisor
Senior Placement
Yale University

Coral Gables, Fla.

Sir:

For years we have looked for something like the College Placement Annual and now that we finally have it, I want you and your associates to know that I think you have done a wonderful job in this first edition. Unless you have worked at this job of trying to help seniors, you cannot fully appreciate what a tough job it really is and the Annual certainly is the "answer to the Placement Director's Prayer."

I have noticed quite a few companies who recruit here are not included, but I am sure the next issue will be bigger and better.

Louis A. Miller, Director
Placement Service
University of Miami

(Annual editors have recently circularized all placement offices asking for lists of recruiting companies not represented in the first issue of the Annual. Many of these will be firms which were invited to provide listings (without cost, of course) last year but did not respond. An opportunity will be provided for the 1959 issue shortly after the first of the year. Ed.)

Montreal, Canada

Sir:

It has met with a very satisfying and appreciative reception from the student body.

Thomas M. Moylan, S. J.
Director, Placement Bureau
Loyola College

Middlebury, Vt.

Sir:

The College Placement Annual is a masterpiece and is most helpful to our seniors and returning veterans. With the aid that our seniors and returning veterans are getting from the articles in the Journal and the information in the Annual, it is making things much easier for them and keeping them well informed of what personnel men are looking for in talking with young college graduates.

Gordon C. Perine
Director of Placement
Middlebury College

Guidance Counsellors !

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A) one year or less B) over one year

Time of Active Duty

A) 2 years B) 3 years

Minimum Requirements — Applicants must be 18 years of age but not have attained their 28th birthday on date of entrance into the program. They must be female citizens of the United States, unmarried, and matriculated as a full time student in an approved nursing school which offers a 3 or 4 year program leading to a diploma or bachelor's degree in nursing.

Registered Nurse Program

Benefits—This program entitles participants to one year of full time study leading to a bachelor's or master's in nursing. During this period they will receive the rank, pay and allowances (over $4,000 a year) of a commissioned officer.

Obligations—Participants must serve on active duty for a period of 3 years, which will include time spent in training.

Minimum Requirements — Applicants must be 21 years of age but not have attained their 30th birthday on date of entrance into the program. They must be unmarried citizens, graduates of an acceptable school of nursing, and currently enrolled or accepted in an approved college or university which offers a course in nursing leading to an academic degree. Furthermore, they must be able to complete all requirements for this degree within one year.

By directing the attention of qualified students to the above programs, you will be serving their best interests while you serve your country. For full information, mail this coupon.

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Washington 25, D.C.

JCPN-12-57

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School_____ Position_____

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than a salary.."

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Jobs are permanent, full-time and in the academic environment where work is a pleasure, and promotion lies ahead for those who are qualified.

See your Placement Office and sign up for an interview if Harvard is to visit your campus. Otherwise, see us whenever you are in Cambridge.

Personnel Office

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Women's Educational and Industrial Union

264 BOYLSTON STREET
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A unique Boston organization established 1877

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Northfield, Minn.

Sir:

We want to tell you what a tremendous job you did in getting out the COLLEGE PLACEMENT ANNUAL. We think it is excellent and the reactions of the students have been excellent.

Leith Shackel, Director
Placement Bureau
Carleton College

San Diego, Calif.

Sir:

We have been most impressed by the COLLEGE PLACEMENT ANNUAL and feel this is a splendid help which is being performed by your association for college seniors throughout the United States.

Will M. Kidwell
Placement Officer
San Diego State College

Duluth, Minn.

Sir:

I have found it exceedingly helpful at the Duluth Campus of the University of Minnesota and am happy to report that the students have been equally enthusiastic over the publication.

Willard E. Johnston
Coordinator of Placement
Duluth Branch
University of Minnesota

Davenport, Iowa

Sir:

The senior students were delighted and very grateful to you for sending copies of this excellent publication. I'm sure they will profit greatly by using it in their efforts to secure their first positions.

John F. McGuire
Placement Director
St. Ambrose College

Golden, Colo.

Sir:

This year's COLLEGE PLACEMENT ANNUAL is indeed a very fine publication.

William V. Burger
Dean of Students
Colorado School of Mines

Tampa, Fla.

Sir:

I am finding the ANNUAL an exceptionally fine tool to use in connection with counseling done with our graduating seniors. I have good comments from various seniors concerning the articles in the forepart of the ANNUAL. Also, in this instance, I find that the advertising throughout is very useful and gets the attention on the part of the users. In fact, the advertising is—in many cases—a very good introduction to the company itself.

Boyd B. Burnside
Dean of Men and Placement Counselor
University of Tampa

Wellesley, Mass.

Sir:

The ANNUAL is terrific. Section One is excellent; Section Two just what we need; and Sections Three and Four beyond our fondest expectations. Orchids!

Everett W. Stephens, Dean
Babson Institute

Durham, N. C.

Sir:

Our ANNUALS arrived October 1 and we have already been getting them about the campus. I have been delighted with the reports we have received from the students and also from Mr. Robert Colver of our Testing and Guidance Bureau. I knew the ANNUAL would be good, but I had no idea it would be as good as it is.

Fannie Y. Mitchell, Director
Appointments Office
Duke University

Bloomington, Ind.

Sir:

Faculty and student reception of the ANNUAL is overwhelming. The format, content, and approach are most outstanding! In fact, words fail me in expressing my deep satisfaction.

J. D. Snider, Director
Bureau of Personnel Relations and Placement
Indiana University

College Station, Texas

Sir:

The ANNUALS are going like hot cakes and the comments received thus far from the boys indicate that you have done an excellent job.

W. R. Horsley
Director of Placement
Agricultural and Mechanical College of Texas

Boston, Mass.

Sir:

The ANNUAL is a highly professional publication and an extremely informative one. I am sure everyone who has occasion to use the publication will be grateful.

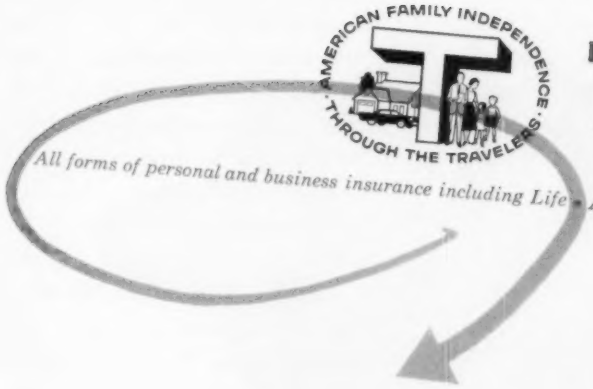
Anna M. Hanson
Director of Placement
Simmons College

Brunswick, Me.

Sir:

I cannot let another day go by without writing to tell you what a fine publication you and your associates have produced. Already a number of our senior registrants have picked up copies here at the office and I am sure they will find it extremely helpful as they plan their vocational campaign.

S. A. Ladd, Jr., Director
Placement Bureau
Bowdoin College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THROUGH THE TRAVELERS
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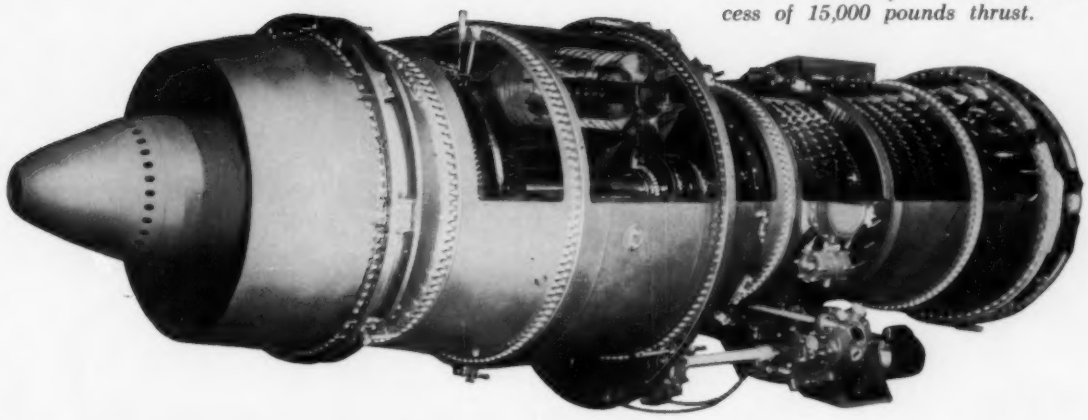
Cutaway model of Pratt & Whitney Aircraft J-57 engine, first to be rated at more than 10,000 pounds thrust. This twin-spool, axial-flow gas turbine and the newer, more powerful J-75 power the country's newest fighters, bombers and missiles, and are slated for Douglas DC-8 and Boeing 707 jet airliners. The J-75 turbojet is rated in excess of 15,000 pounds thrust.



About Pratt & Whitney Aircraft

From its founding in 1925, Pratt & Whitney Aircraft has been essentially an engineering company. Its primary objective has been the design and development of new aircraft engines of superior performance and dependability. The guiding policy has always been, simply, that technical excellence must be the paramount objective, attained through constant effort to improve upon the best.

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All through the 1930s the power, range and fuel economy of the Pratt & Whitney Aircraft Wasp and Hornet engines were developed and the engines seasoned with experience. Wiley Post, the Lindberghs, Martin and Osa Johnson, Amelia Earhart, Admiral Byrd and Roscoe Turner were among the host of famous pilots who made aviation history with Wasp power.

During World War II, 50 percent of the aircraft powerplants for the American air arms were engineered by Pratt & Whitney Aircraft. Three of the five key fighter airplanes, a host of medium and heavy bombers, and 98 percent of all the military transports used Pratt & Whitney Aircraft engines.

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Pratt & Whitney Aircraft operates a completely self-contained engineering facility in East Hartford, Connecticut, and is now building a similar facility in Palm Beach County, Florida. For further information about engineering careers at Pratt & Whitney Aircraft, write to Mr. F. W. Powers, Engineering Department.

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PRATT & WHITNEY AIRCRAFT

Division of United Aircraft Corporation

EAST HARTFORD 8, CONNECTICUT

It's high time industry and the colleges took a long look at what is happening to women in U. S. business.

Periodic surveys of corporate interest in recruitment of women at the colleges reflect limited concern with coed commitments. Yet, 22,000,000 women already grace the business scene—many at impressive levels of responsibility. Some authorities are suggesting that the best solution for the manpower problem is womanpower.

Columbia University's 1957 Ford Foundation Report "*Womanpower*" is timely and may focus the attention of American business on the strengths which are latent in its distaff staff. Once the virtues of women in industry are reviewed and revealed, new areas of activity and new levels of responsibility will come into clearer outline.

The objectives of this article are three:

1. To identify the number and kinds of women in industry and to indicate some influences affecting female employment.
2. To sketch some of the special characteristics of working women.
3. To offer some thoughts on how the businesswoman can integrate more harmoniously, achieve stature more swiftly, and contribute more to the general economy.

In 1890 there were 4,000,000 women working; in 1940, 13,000,000; in 1950, 17,000,000; and in 1957, 22,000,000. Actually there *are* only 83,000,000 females in the United States. Of these, 60,000,000 are adult. Thus more than one in three is a breadwinner. The population of the U. S. has doubled in our lifetime. With 22,000,000 women working, they comprise about ⅓ of the total work force.

Women

OUR OTHER GREAT RESOURCE

BY WALLACE JAMIE *Director of Public Relations, The Carnation Co.*

With some suggesting that the best solution to the manpower problem is womanpower, the author takes a hard look at the present status of working women and suggests their special characteristics as well as steps they might take to speed their acceptance into executive levels.

Since gals are so numerous on the business scene, we'd better know something about them–other than that they can add as well as distract.

The average U. S. woman is 5'4" tall, weighs 122 lbs., has brown hair, blue eyes, a 25½" waist, 34" bust, and 36" hips. She is 10 pounds lighter than 30 years ago. Incidentally, the higher a woman's—or husband's—income, the smaller her waistline. Women in this country have more formal education than men—10.7 median years as opposed to 9.9 years for men. However, only 10% of all women complete college.

Today 30% of all the married women in the U. S. hold jobs. More than half of all employed women are married, and half of them—the working, married women—are more than 40 years old. Average marriage age for women is 21–22. (The husband is about 3 years older.) Three in twenty couples have no children. The first child usually comes a year after marriage; the last when the mother is 28. The youngest, therefore, is 18 when the mother is 45. Four out of five adult women have been married. Three out of four have worked outside the home at some time in their lives. 2.3% of adult U. S. women are divorced—a six times larger percentage than in 1890. The girl who works is more likely to get married. The trend in marriage, like the trend to work, is upward.

The median wage for women is $1,363—for men, $3,552. (More on this matter of pay discrimination soon, but footnote this item with the fact that lots of women workers are part-time and/or temporary.)

The average working woman today is 39. In 1900 she was 25. Women born in 1925 can expect to reach 61, or live three years longer than men of the same age. Female

babies born today will probably live to age 74—barring cataclysm. 30% of all women in the labor force are past 45. The largest group of women workers is between 35 and 45.

Possibilities Now Limitless

In 1840 women had three opportunities for employment: teaching, needlework, and keeping boarding houses and hotels. Now employment possibilities for women are as limitless almost as the dictionary of occupational titles. 450 prime responsibilities have been listed. The number of women employed in clerical activities has more than doubled in recent years.

The number of women in the professions is soaring. Teaching, nursing, welfare work, library assignments, and medical-technical spots are attracting legions of females. It is noteworthy that although the numbers in the professions have increased, the percentage of the totals has not. Apparently when jobs are plentiful, long professional training is avoided.

The *age changes* are very interesting. The number of women over 45 has increased 4 times in the population and 9 times in the labor force. One factor in age changes of women workers is a tendency to extend school attendance. Moreover, the curriculum for females has undergone a metamorphosis since the days of Miss Finch's Seminary for Polite Young Ladies. Gals—perhaps regrettably—are slanting away from the humanities in favor of engineering, social science, and business administration. Fewer than 40 in 100 now major in the humanities. Comes World War III, Rosie the Riveter may give place to Edna the Engineer.

College almost amounts to education for spinsterhood. Studies show that women seek to marry above their level and men below. Coeds apparently become hyper-particular.

Now a brief word on pay trends for women. It's a bleak tale.

One-fifth of the nation's income in the form of wages and salaries is earned by women. They are responsible for more than one-fourth of the man hours—if you will forgive the expression—worked.

It is a seldom debated contention that women are paid less than men for similar work. The fact that females are more frequently part-time or temporary workers by no means accounts for the disparate figures. Among full-time workers in 1957, for example, the medium wage and salary income of women was less than 2/3 that of men, according to the National Manpower Council. Hourly earnings of production workers average 70% of male income for such production. It is impossible to prove or disprove the claim that pay differentials between so-called "men's jobs" and "women's jobs" are the result of lower levels of skill and responsibility for the women's jobs. This is probably only partly true.

One happy fact has apparently been established by the Bureau of Labor Statistics: whereas before World War II women worked for about half the salaries of men in similar assignments, now their earnings come much closer to matching the male rates—in the case of hourly workers, 95 to 99%; on incentive or piece rates, 88 to 99%. Differentials are probably somewhat greater in higher level jobs. However, union pressures, Civil Service systems, the growth of job evaluation plans where function rather than the incumbent is stressed, and the generally enhanced rationality of management and of personnel administration are all operating to decrease the pay differentials between men and women workers in like employment.

Cites Employment Influences

What factors have brought about the sharp increase in female employment? I'll just hint at the influences: they are broad and pervasive.

First, and basic, are the fundamental changes in economic, technological, political, and social factors. For example, discontinuation of home spinning and baking; introduction of synthetic fabrics; convenience food and other products; improved transportation; children in school for more years with attendant heavier expenses and less home responsibility; aspiration for a higher standard of living, etc.

Other factors in increased female employment include a revised public attitude toward the gainfully employed woman; abatement of prejudices against females, particularly married ones, in the factory or office; and lighter duties in the era of the machine and of automation. The warmer welcome in a degree stemmed from appreciation for the magnificent contribution of women in two world wars. There have been recurring crisis situations. Also, female longevity has increased. Immigration of women with a need to earn a livelihood has been another factor, as has the expanding characteristic of urban populations.

Classifications Have Increased

Educational advances for women have, of course, increased the number and improved the classifications of that sex in the work force. We've come a long way from the time when women were first admitted at the university level at Oberlin in 1833 and Vassar in 1865 to the Radcliffe graduate program today.

But at Caltech even in 1957 women are still anathema at the Athenaeum. Notwithstanding this discrimination, women engineers in the U. S. have increased nine-fold from 1940 to 1956—from 730 to 6,475.

Despite the unprecedented number of women at work there is a shortage of same. This is notable in many fields. *Time* magazine recently decried the secretarial shortage and said that girl-power—in terms of need—is lower now than at any time since the mid-1920's. According to *Time* the prestige of the secretary is waning. "The airline stewardess has more fun, and waitresses, buyers, librarians, copywriters, and engineers make

(*Continued on page 136*)

WHAT KEEPS MEN MOVING UP?

TWO things keep men moving up. First, they have to have the training to fill a bigger job; and second, there has to be a bigger job.

All promotions at the Timken Company come from within. Promising college graduates get the training that will help them step up. Compulsory retirement at 65 gives younger men a chance sooner. The Timken Company offers a real challenge to engineers as well as to business administration graduates.

At the Timken Company the pioneering of new markets for bearings, rock bits and steel and the development of improved products creates new and bigger jobs constantly. Take freight car bearings, for instance. We pioneered the railroad market for roller bearings and now we're building the most modern freight car bearing plant in the world. And it will be staffed by men who got their training at the Timken Company. Pioneering like this has made the Timken Company the world's largest producer of tapered roller bearings, the biggest manufacturer of removable rock bits and a leader in fine alloy electric furnace steel. And it's created many opportunities—kept men moving up.

It's the job of Timken bearings to keep things rolling. And men who go with the Timken Company keep rolling too. For more information write for your free copy of "BETTER-ness and Your Career at the Timken Company". The Timken Roller Bearing Company, Canton 6, O.

THE TIMKEN ROLLER BEARING COMPANY

TAPERED ROLLER BEARINGS • ALLOY STEEL & SEAMLESS TUBING • REMOVABLE ROCK BITS

Sometimes how-not-to-do-it can give a more effective lesson than the usual how-to. In this series of pictures posed by Gulf recruiters, the examples are about as bad as you can get, from arriving late, left, and no doubt complaining about the early hour of the morning, to monopolizing the desk, above, with a messy brief case, and asphyxiating the prospect with smoke.

Gulf BUILDS A RECRUITING TEAM

Finding the right personnel ranks high on the list of problems facing many companies today. Normally, specialists do this work and when inexperienced line personnel are pressed into service, the program often suffers. Here is how one firm "did something about it."

Then there are still other ways to lose candidates. Have a fellow interviewer interrupt, for just a moment, to discuss a point, whether it's pertinent or not.

AN employment manager once said, "Recruitment is no problem. All one has to do is mention that an opening exists and every person in the plant has just the relative or friend to fill it." Obviously, he was oversimplifying the problem, for finding the right talent and bringing it into an organization is no simple job. It frequently takes the "patience of Job" to overcome the negativism of those who publicly enthusiastically endorse recruiting, but "when the chips are down," willingly let "Joe" do it; and the agility of a "whirling dervish" to meet the demands of a supervisor whose program has suddenly become hampered by the lack of specialists to complete some complex job. Fortunately, today, more often than not, it is acknowledged that recruiting, particularly of technical personnel, is inescapably the job of every supervisor and not solely that of an employment manager.

In our Company, like so many others, the necessity of securing personnel to meet the demands of a growing organization has done much to fan interest in intensified forms of recruitment. It has resulted, over the years, in a coordinated recruitment system to which management has subscribed its wholehearted support.

A careful analysis of data accumulated over the past four years has revealed that (a) placement con-

Alone again? Then try a joke and, if he's not amused, then do-it-yourself.

Or try teamwork. With three experts on hand, subject him to the third degree.

Or just forget him completely. Old friends don't often get a chance to meet.

But end the interview properly, with smiles. He'll be glad to be on his way.

tacts and candidates alike have responded better to experienced recruiters, (b) it was necessary to visit three times as many schools in 1957 as in 1953 to see the same number of applicants, and (c) the ratio of acceptances to offers has dropped from 87 per cent to 32 per cent during the same period. Obviously, the job of recruiting personnel has become a major problem. It has also become a physical impossibility for one, or even a few recruiters, to cover the field sufficiently to satisfy our demands.

In addition to statistical considerations, other aspects of the problem were of equal concern. Should a key supervisor help conduct recruitment? If so, how much time can he spare away from his job? Since all supervisors are not effective recruiters, how do you restrict the activities of poor ones without creating difficult managerial situations? How do you handle a supervisor's request to have "good old Joe," who has all the drive and personality of a wet noodle, serve as his representative? If an expanded recruitment organization is in order, how large should it be, who will participate, and what shall their duties be? Finally, what is the best way to train recruiters in a relatively short time to do an outstanding job?

In view of these problems, it became apparent that (a) an expanded recruitment organization was necessary, (b) the participants should be carefully selected, and (c) the participants should be trained to recruit properly.

Once executive approval was obtained on this course of action, the major responsibility for planning and executing the program fell on the Employment Manager.

The first step was to select employees who would be acceptable to all supervisors as recruiters. In cooperation with the Employee Relations Manager and the Executive Heads of the various divisions, the Employment Manager reviewed the entire staff and carefully selected employees from each division, thirty in all, who, by virtue of their training, position, and personality characteristics, appeared to have the essential qualifications of good recruiters. They were notified by their supervisors and given a chance to decline. None did. From then until the formal training program began, the participants were kept informed, verbally and through correspondence, of everything relating to the program.

Penn State placement director George Leetch was invited to be the guest lecturer at the Gulf recruiters' two-day training program, and present the placement story from the colleges' side of the fence. No punches were pulled by either lecturer or by audience during his talk.

It had been agreed, too, that the training phase of the program was to be divided into two parts: (1) A two-day formal training session, and (2) Informal and continuous training during the actual recruiting.

A date was established. The program's format was prepared, skits rehearsed, cartoons and slides developed, and speakers arranged, to assure that (a) The material would be presented in simple, attention-getting language, and (b) Visual demonstrations and human activity should be used whenever possible to demonstrate a principle. Anecdotes and humor were studiously introduced whenever possible to intimately relate the recruiters' actions to anticipated situations. The three areas to be covered were:

1. Company organization, operation, practices, policies, and manpower requirements.
2. The Corporation's College Recruitment Program and lines of communication.
3. The broad principles of recruitment, selection, and placement.

Dr. Blaine B. Wescott, Executive Vice President and Director of Research, opened the two-day session. In outlining the objectives he said, "To continue as an outstanding research team, we must be constantly searching for and bringing into our organization the best talent our educational institutions can produce. That is the job of our recruiters." Later he added, "While it is necessary for us to recruit vigorously, it is highly important that we conduct our relations with others in accordance with the highest moral and ethical standards possible. That is a responsibility of our recruiters." He concluded by emphasizing that the participants had the full support of their supervisors and others on the administrative level. He reiterated this point in a subsequent visit.

The Employment Manager then set the stage by discussing the general theme of the program. It was "Don't buy a pig in a poke." While it may sound somewhat

(*Continued on page 132*)

By Dean Elmer C. Easton
College of Engineering, Rutgers University

A Partnership in Engineering Education

This thought-provoking thesis, originally presented before the Middle Atlantic Conference, has attracted attention as an unusually objective view of the background of America's future manpower requirements.

FOR the next decade, largely because of the low birth rate during the depression years, the population of the United States will grow in such a way that there will be a relatively large percentage of elderly retired persons, a relatively large percentage of children, and a relatively small percentage of workers. As a result of this unusual distribution of age groups, it will be necessary for each worker to support many non-productive people. The productivity of every worker must increase if we are to improve or even maintain the present standard of living. In the event of a war which would draw men from the working force, greatly increased productivity of the remaining workers would be essential for survival itself.

The number of elderly people in this country seems destined to increase for some time. However, the rising birth rate since World War II indicates that we shall gradually assume a more normal balance between children and workers. At the same time it is to be hoped that world tension will subside and the men now under arms will return to civilian pursuits. Hence the impending shortage of workers will be reduced.

If we increase the productivity of each worker in the next few years so that we can support vast numbers of unproductive children, elderly people, and military personnel, it is apparent that we shall face problems of adjustment when the shortage of workers comes to an end.

As I see it, there is only one way to absorb the increasing percentage of workers without upsetting the economy and that is to employ them on *new* products and *new* services for which a demand has been created.

The problem, then, is a changing one. First we must increase the productivity of every worker to supply normal consumer demands and military needs during the years when there will be a relatively small percentage of workers in relation to elderly persons and children. Later we must increase our productivity of entirely new products and services in order to maintain full employment when the percentage of the population in the labor force increases.

Let us consider now the factors which influence productivity. The most obvious factor is machinery. The more automatic machinery a worker has at his disposal and the greater his skill in using it, the more he can produce. If we are to increase productivity we must have more machinery and more integration of this machinery through automation.

Given the machines, we must have energy to drive them. We need coal, oil, gas, nuclear fuels, and solar energy.

Given the machines and the energy to run them, we must have materials with which to produce useful goods. If we secure adequate supplies of these elements, and if we educate our people to use them, we shall be able to increase our productivity for normal needs and for defense in the years when the labor force is relatively small.

Now, what is the outlook for obtaining these elements?

The President's Materials Policy Commission reported in 1952 that with regard to many basic materials the United States is rapidly becoming a have-not nation. According to the Commission, in 1950 this country produced 9% less materials (other than food and gold) than it consumed. It is estimated that by 1975 this deficit may be 20%. The time will come when we shall have to develop substitutes for many of the materials which we consider essential today. Furthermore, we must develop completely new materials with new properties to meet the demands of such ad-

vances as supersonic flight and nuclear power. I say that we must *develop* these things. Obviously, they do not exist in nature. They must be compounded out of abundant ingredients which do occur naturally. This compounding cannot be done by some uneducated person mixing batches of material at random. It can only be accomplished through the systematic and persistent application of all of the known laws of physics, chemistry, biology, and mathematics. Progress will depend on the development of these sciences and on the number and competence of the people who are familiar with them.

In the last fifty years mankind has consumed as much fuel as was consumed in all previous time. Half of that fuel was used in the United States. At the rate we are going, I estimate that we shall consume all of the coal, oil, and gas in the world in about 1,000 years. Some responsible engineers believe that for all practical purposes the supply will be depleted in 300 years. Long before the fossil fuels are gone, the cost of producing them from low grade sources will become very great.

New Fuels Will Be Vital

The very existence of civilization as we know it depends on the development of new fuels and means of using them. The most promising sources are the energy from the fission and fusion of atomic nuclei and from the radiation which we receive from the sun. Think of the difference between the obvious procedure of burning coal to produce power in a steam engine and the process of obtaining energy from an atomic pile. The idea of obtaining energy from the fission or fusion of atomic nuclei was not obvious and was not conceived by man until he learned to use the most advanced concepts of physics, mathematics, and chemistry. The concept was predicted theoretically before it was observed in the laboratory. The development of devices using atomic or solar energy will depend entirely on the quality and quantity of our engineers and scientists.

The nature of the machines which are needed for this age of automation is far different from the equipment which was in general use fifteen years ago. Until quite recently, machinery used in production was of a rather obvious type. Each machine might perform a single operation and do so in a manner which could be readily observed from an examination of its parts. Today machines are being interconnected through electronic control systems so that the operation of any one device will affect in some predetermined way the operation of every other unit of the system. The design of such automatic systems requires the use of incredibly complex mathematical analysis as well as a thorough knowledge of the basic principles of electronics, mechanics, chemistry, physics, and the other sciences. There is nothing stereotyped about designing for automation. Knowledge of current or past practice is not as important as ability to apply engineering principles to produce novel solutions to new problems.

The development of the new products which will be needed later to employ an expanding labor force also depends on the application of very complex mathematical and scientific principles. As an example of a new and strange product which engineers are now developing to create new jobs, consider the electroluminescent light source. This lamp is in the form of a sheet of material which glows uniformly when electricity is applied. To the casual observer it looks like a simple piece of colored glass. There is no filament or any apparent source of light. The design of this lamp is not obvious. Its operation can be understood only by a person thoroughly versed in the most advanced theories of solid state physics and mathematics. This disarming appearance will characterize most of the new products which the next generation will see. The need for competent engineers and scientists to design them will increase.

It should be obvious that the *quality* of our engineers measured in terms of their ability to create new processes and materials is of paramount importance to the security and economic well-being of our nation. It is true that we shall need large numbers of such personnel but quantity cannot overcome a deficiency of quality. One good engineer with an adequate knowledge of the basic principles involved can design a new product like an electroluminescent lamp or a new system of automation. A thousand poorly prepared engineers could not duplicate the feat.

Education Is A Joint Venture

Today there is a growing awareness on the parts of both industry and the colleges that the complete education of the engineer must be a joint venture. The colleges constitute the best medium for imparting the unchanging scientific principles which have guided the operation of machines and processes in the past and which will forever govern the operation of machines and processes yet to be invented. On the other hand, to acquire knowledge of current practice there is no substitute for industrial experience. There is no way to develop mature engineering judgment other than by growing up in the proper industrial atmosphere. The engineering profession is learning what the medical profession has learned —that formal education must be supplemented by interneship. As an example of this recognition I call your attention to the fact that the Engineers' Council for Professional Development now sponsors programs to direct the young graduate's development during the first five years after leaving college. (*Literature on these programs may be obtained from the Engineers' Council for Professional Development, Committee on Professional Training, Room 13-217, 3044 W. Grand Blvd., Detroit 2, Mich.*)

These post-graduate development programs are conducted by groups of industries and by sections of the

(*Continued on page 130*)

Monsanto Chemical Company

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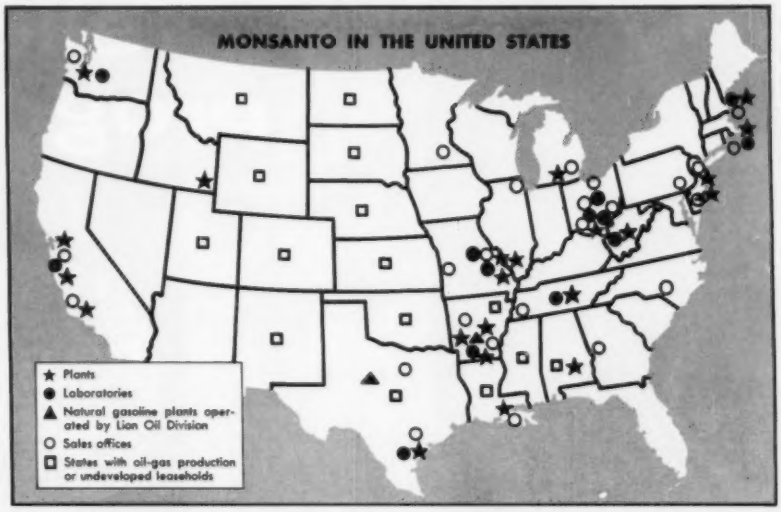
For More Information...

Write to: Technical Personnel Manager, Monsanto Chemical Company, 1701 South Second Street, St. Louis 4, Mo. Please specify the particular location, function or division preferences, if any.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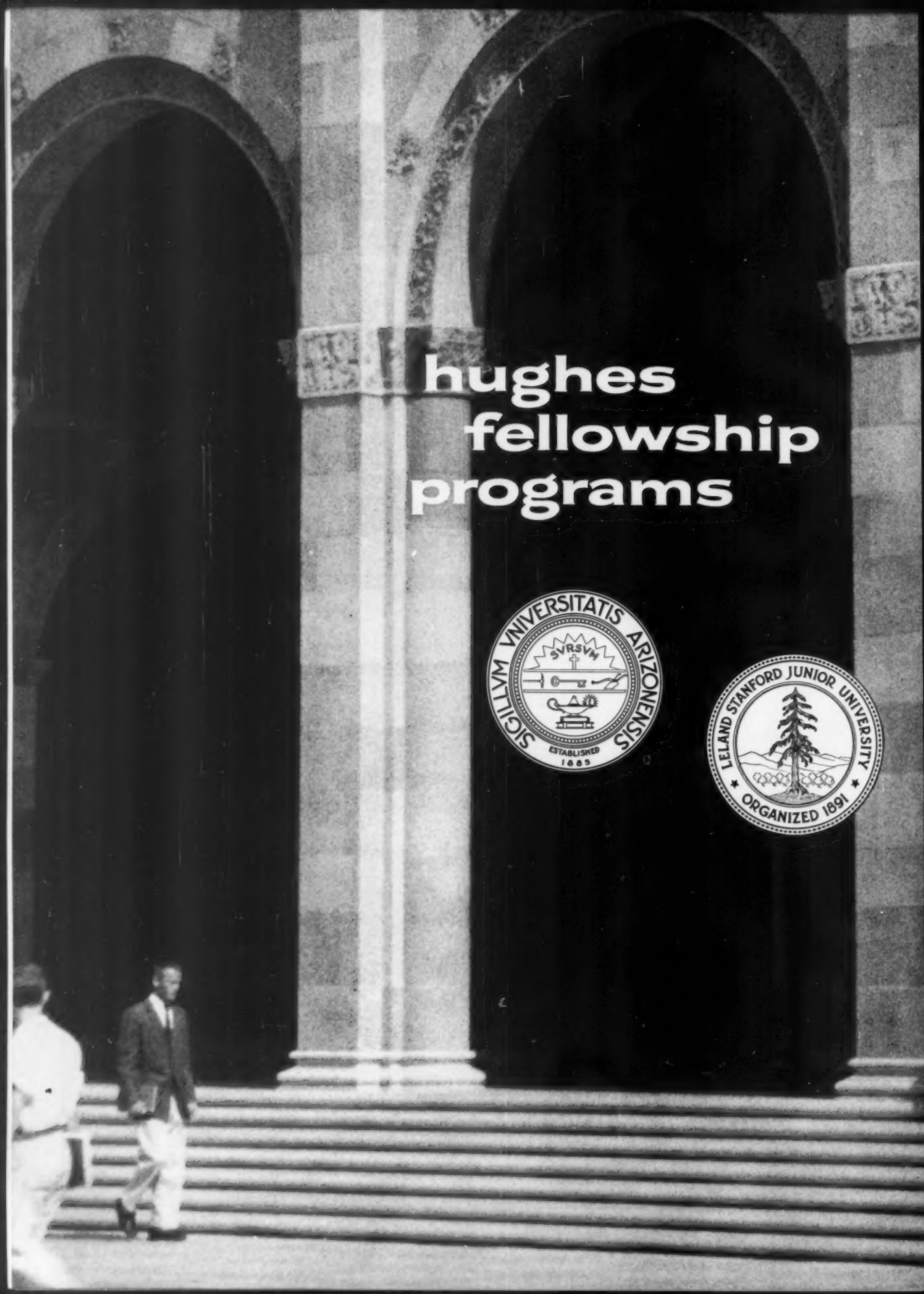
RESEARCH	Fundamental	X	X	X	X		X	X	X		
	Exploratory	X	X	X	X		X	X			
	Process	X	X	X	X		X	X			
	Application		X	X	X		X	X	X		
	Engineering				X		X	X	X	X	
	Analytical	X	X		X						
	Pilot Plant		X	X	X			X	X	X	
	Design Engrg.							X	X	X	
	Plant Engrg.							X	X	X	
	Chemical and Plastics Prod.	X	X	X	X			X	X	X	X
	Process Investigation	X	X	X	X			X	X	X	X
	Technical Sales	X	X	X	X	X	X	X	X	X	X
	Product Development	X	X	X	X			X	X		X
	Customer Technical Service	X	X	X	X		X	X	X	X	X
	Technical Writing	X	X	X	X		X	X	X	X	X
	Patent	X	X	X	X		X	X			X
PETROLEUM	Exploration					X					
	Production					X					X
	Production Research										X
	Refining							X	X	X	X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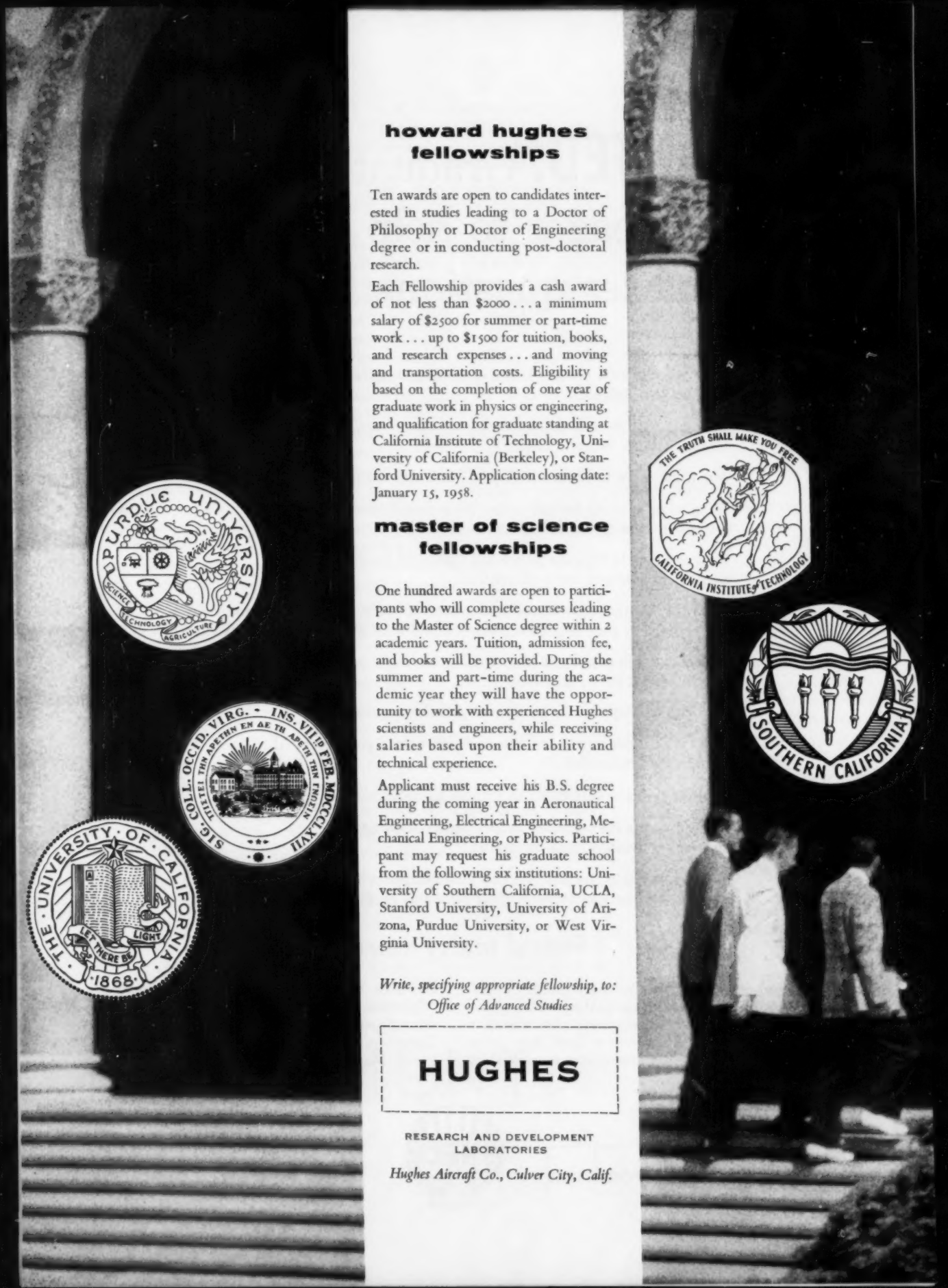

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PLACEMENT: WITH A DIFFERENCE

The International Association for the Exchange of Students for Technical Experience has behind it nine years of accomplishment. Here is a view of a personnel activity on the grand scale, told by one who has had a key role in its development as a vital service for young people.

By J. NEWBY

Secretary of the I.A.E.S.T.E., Imperial College, London, England

ADEQUATE training of future scientists, engineers, and businessmen is of great importance to industry, and today industry must be prepared to, and often does, take some considerable responsibility for that training. Many education and training officers may have already heard of the activities of the International Association for the Exchange of Students for Technical Experience, the I.A.E.S.T.E., during the past nine years; for many employers use vacation courses and the I.A.E.S.T.E. organisation as a means of recruiting promising young students for their technical and commercial staffs.

In the report of The Universities and Industry Conference, held by the Federation of British Industries five years ago, productive industry's problem "of applying promptly the best available knowledge to all phases of its work", as well as the problem commonly referred to as "human relations," was examined. The report concluded:

"Industry thus looks to the universities for men who have some understanding of the wider aspects of life than can be gathered from the mental discipline of their own particular subject. It believes that those on the scientific side should have some appreciation of the humanities and, in particular, of history and their mother tongue."

Today in many universities, attention is already being given to this question by the provision of special lecture courses on a wide range of subjects; and it was with a view to providing the students of Imperial College with a broader outlook and, at the same time, practical experience during the summer vacations, that arrangements were made in collaboration with a few of our industrial friends to exchange students with universities abroad. In 1946, 20 Imperial College students were placed in industry abroad and we made arrangements to receive a like number of foreign students in British industries. This was for a period of eight weeks. In 1947, the number of exchanges made was 120, all between Imperial College and other countries.

In January, 1948, in order to devise an easy means of transferring undergraduates from one country to another, a conference was called at the Imperial College. Ten countries sent academic, industrial, and student representatives. It was there that the I.A.E.S.T.E. was founded. Collectively and under their own arrangements, the 10 countries represented had sent abroad 484 students in 1947. By meeting together, we were able to increase this number to 920 in 1948. The co-operation given this project by industries in the member countries has been very encouraging, and the total number of students sent abroad has grown steadily, rising to 1,236 the next year, 3,493 by 1952, and 5,711 by 1956.

Today there are committees working in 23 member countries, including Austria, Belgium, Canada, Ceylon, Denmark, Finland, France, the Federal Republic of Germany, Great Britain, Iceland, India, Israel, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, Union of South Africa, the United States, and Yugoslavia.

After the establishment of the I.A.E.S.T.E. in 1948, it became evident from the rate of progress made that, if the work was to continue to develop so rapidly, it would be necessary to broaden its application in Great Britain. Therefore, in June of 1948, the Governors of the Imperial College decided that the machinery which had been developed by the College should be broadened the following year to include students from other universities and colleges. An offer was communicated to 29 institutions in this country, and, as an immediate result, the governing bodies of 12 of these decided to affiliate with the Imperial College organisation for this project.

By 1957 the number of affiliated universities and colleges in Great Britain was 36, and the number of

British students sent abroad that year was approximately 732. In return, about 778 overseas students were placed in British industry and commerce during the summer of this year. Thus the great contribution of British industry and commerce to our work can be seen. By receiving the overseas students and paying them sufficient to meet their living expenses during the period of training, they make it possible for British students to be sent abroad. (The student pays his own travelling expenses.) The number of industrial, commercial, and other organisations in Great Britain accepting overseas students through I.A.E.S.T.E. in 1957 was 325.

In 1951, the Engineering Institute of Canada agreed to sponsor I.A.E.S.T.E. activities for the Canadian universities and industry. Considerable progress has already been made, and in 1957 approximately 130 students were received and placed in Canadian industries during the summer vacation. Although the number of Canadian students sent abroad has, for economic reasons, been small, opportunities are available for them in all the member countries.

There can be no doubt that, from the strictly technical or commercial point of view, a student of any nationality can obtain the best practical or commercial experience for his needs in his own country; but it is suggested that if it is possible to place him in industry or commerce abroad for a short period during the penultimate year of his university or college course, there is the added advantage of learning practices and techniques which are new to him. In addition, he will be working, living, and perhaps playing with people of other nations, and this can be a very excellent counterbalance to any discrepancy between practical or commercial experience obtained at home and abroad. The opportunities provided for the majority of these young students will, in all probability, occur only once in a lifetime and cannot, in any sense, be compared with experience obtained by travelling as an ordinary tourist.

The students sent abroad must already have had a period of practical or commercial experience in their own country and, as the arrangements are made well in advance, they have an opportunity to improve their knowledge of the language of the country they will visit. This preparation, and the fact that the student will obtain experience in his own particular field, usually means that he can adjust himself quickly to his new surroundings. He is thus better able to appreciate not only the different processes and techniques employed, but also—and much more important—the different intellectual approach to various problems. There are other, more general, aspects of his experience. By working alongside the ordinary employees and sharing many of their leisure hour occupations, he obtains an intimate and detailed impression of the country and its people.

The rapid development of our Association, its popularity amongst the students of member countries, and the co-operation given our activities by industrial, academic, and government interests, have, I believe, proved that the broad educational value of our programme is fully recognised and that we are making a contribution by providing industry with an improved human potential for future management and productivity.

Four years ago, in an article for the *International Labour Review*, I wrote, in a statement which is equally true today: "Increased productivity—which is at present one of the dominant pre-occupations among those interested in the development of the economy—depends not only on technological progress but also in a large measure on the human factor. A programme such as that of I.A.E.S.T.E., even if it has no direct and immediate effect in increasing production, can nevertheless exercise a considerable indirect influence in industry. The young man who has made good use of the experience offered will have developed his critical faculties in observing abroad new technical methods and new intellectual methods of approach to various problems, methods which, though different from those used in his own country, nevertheless give results. He will have mixed with people having standards of values—economically, culturally, or morally — different from his own and yet with whom he has lived and worked amicably. What better training could there be for that state of receptivity to new ideas without which there can be no real progress? Increased ability to view and to group into efficient patterns the components of that complex organisation, a modern industrial concern; the wider human understanding so vital to the solution of those problems of human relations in industry, the neglect of which can vitiate any technical advances—these, I think, are the main fruits of practical experience abroad such as that provided by I.A.E.S.T.E."

The secretary of the I.A.E.S.T.E. (Canada) at the Engineering Institute of Canada, 2050 Mansfield Street, Montreal, will be pleased to provide employers and placement officers with full information regarding operations in Canada whilst the Institute of International Education, which sponsors I.A.E.S.T.E. in the U.S.A., will supply similar information.

EXTRA COPIES, PLEASE?

So heavy has been the demand for copies of the 1958 College Placement Annual that the Council Office has exhausted almost completely its limited supply.

Accordingly, placement officers who, for any reason, find that they can spare a carton or more of the publication are urged to return these to the Council Office by collect motor express.

In order to minimize this problem in the future, the next, 1959 issue of the Annual will be distributed first to placement offices holding membership in Regional Associations. After this demand has been satisfied, any additional copies will be allocated to non-member placement offices.

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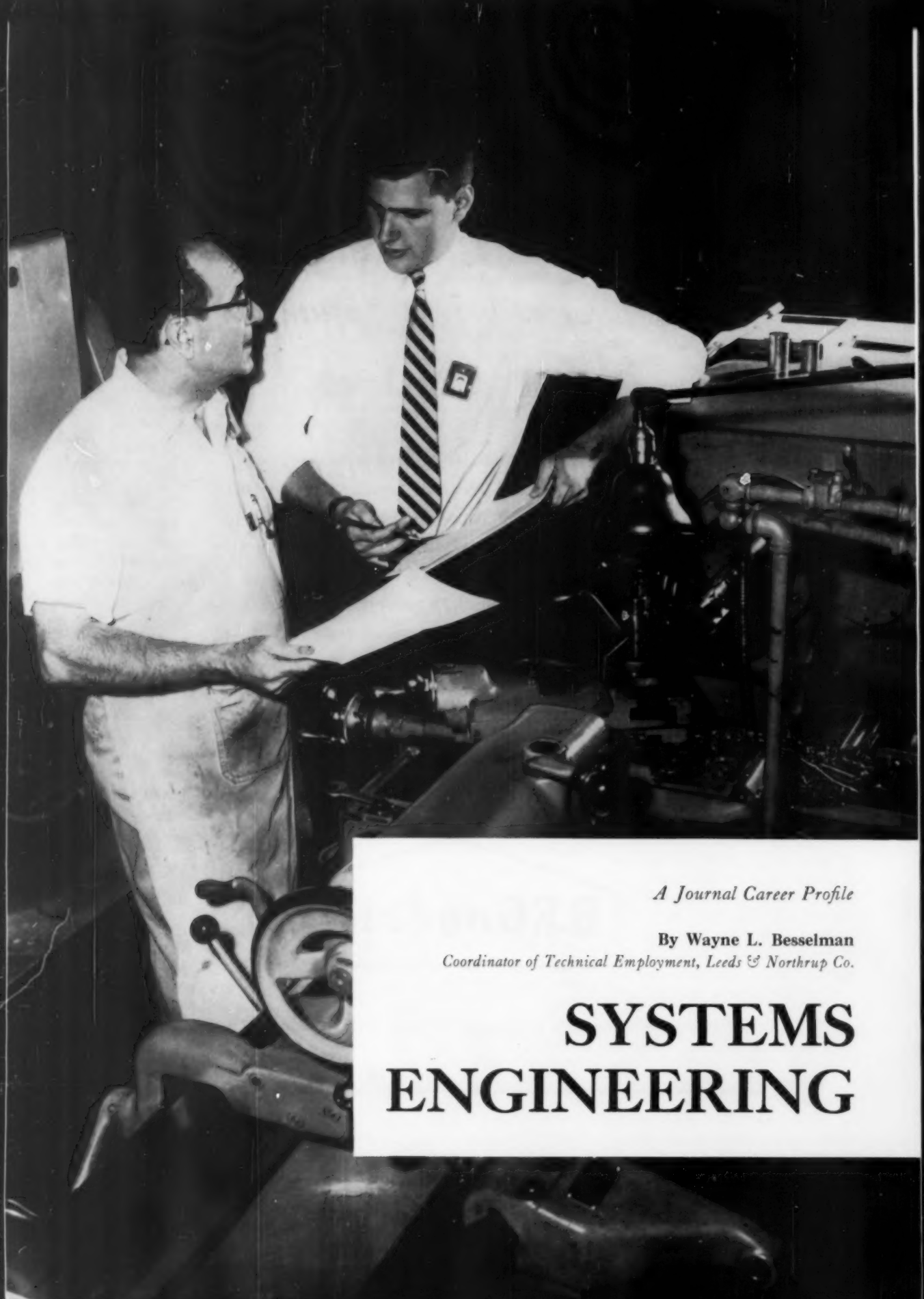


A Journal Career Profile

By Wayne L. Besselman
Coordinator of Technical Employment, Leeds & Northrup Co.

SYSTEMS ENGINEERING

Behind the current glamour of "automation" lies the reality of systems engineering — instrumentation and automatic control. Here is a survey of a field offering new career opportunities and a look at what one company is doing to train the engineers who will assume its share of the load.

FROM the "blue sky" of mach numbers and earth satellites to the basics of food processing and paper production, every facet of our technology is becoming more and more interwoven with a common thread. This thread is "automation"—systems engineering of instrumentation and automatic control. Without process instruments there would be no nuclear reactors, no sprawling oil refineries, no vast steel mills—in fact no mass production. Instrumentation is one of the essential ingredients of our virtually *unlimited* industrial expansion.

An interesting and challenging opportunity awaits today's engineering or science graduate who embarks on a career in this growing industry.

The field is moving forward in a dozen directions, all with a common goal—that of pushing back technological frontiers through the application of more and better instruments and process controls.

It is concerned with the problems, techniques, and latest developments of every phase of American industry —steel, metal working, ceramics, petroleum, chemical processing, power, nuclear energy, basic research, education.

Along with other companies in the instrument industry, we at L&N have accepted the challenge of this advancing technology. By 1932 we had pioneered and were supplying to industry the first electronically-balanced high-speed temperature recorder. This pioneering spirit has flourished with subsequent "firsts"—complete package control systems for nuclear reactors, data reduction systems for supersonic wind tunnels, incremental cost computers for delivered power—things that were only dreams a few years ago and theory before the present decade.

These are just a few of the advances creating a host of new opportunities for engineers and scientists—men whose training and experience will be focused on solving the instrument automation problems of science and industry. To the men who accept this responsibility will go the rewards of growth in a field constantly a step ahead of industry's tomorrow.

To say that the instrument industry is a versatile one is an understatement! Instrument application and control systems engineering in one form or another reaches into every corner of science and industry. Consequently, the field offers opportunities for the science or engineering graduate to apply a wide diversity of talents.

Instruments, from the butcher's scale to the nuclear physicist's control panel, are found in research laboratories, in engineering development and testing, and in every phase of production and manufacturing. Therefore, whether a man's undergraduate specialization has been in electrical, mechanical, chemical, or industrial engineering, or in physics or chemistry, he will find his background of direct value as he gets

The industrial engineer at L&N, at left, is responsible for several things, including analysis of production problems, methods of manufacture, and work simplification. The office of a load dispatcher, above, gives an idea of instrument application in the electric power field. The Speedomax recorders, which line the walls, give operators the varied data they need on operating conditions throughout the system, a system which controls power distribution over several states.

into one or more of the many facets of systems engineering.

Furthermore, this expanding field is clamoring for technically trained people to fill key spots at every stage in the development, manufacture, and marketing of its highly specialized products.

Research and development are the life blood of modern industry. This is especially true in the instrument industry.

For a given problem there may be several possible solutions. The research or development scientist is responsible for finding the best solution. Sometimes he discovers new facts. Sometimes he applies established principles. In all cases he uses a creative approach.

In research, new principles for circuits, mechanisms, instruments, computers, primary elements, etc., are derived. Components and materials of construction are tested and evaluated.

In development, the creative ideas originating in research are turned into working models or prototypes. Field trials in customers' plants assist in final evaluation. Development cooperates closely with product engineering to prepare new products for manufacturing and marketing.

The product engineer is the key to a successful product. Working closely with research and development, application, and industrial engineers, it's his job to take development's working model or prototype and design a satisfactory finished product. He designs, tests, and evaluates all of the materials and components. He must be certain that an instrument can be efficiently and competitively produced by standard manufacturing methods. It's also his responsibility to be sure the product meets the rigid requirements of the application engineer and the industry for which it has been developed.

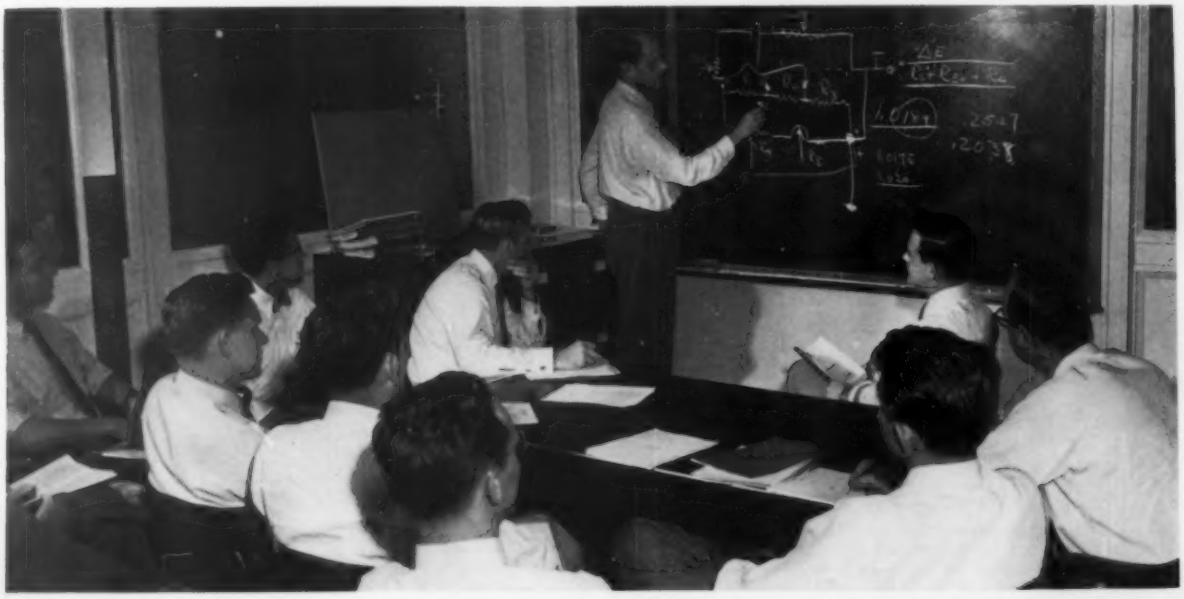
The industrial engineer deals with time and motion studies, incentive plans, plant layout and equipment, tool design, and tool making. He is responsible for analysis of production problems, methods of manufacture, and work simplification. He works with product engineers to promote high-quality designs which can be manufactured economically.

Production presents an interesting challenge for the engineer. It involves close and constant correlation between production, industrial engineering, cost-accounting, order control, product engineering, and inspection. A real flair for organization is needed. The production supervisor must deal competently both with machines and men. He learns to develop leadership—first in himself, later on in others. He moves forward as he demonstrates know-how—first in working with, and later in solving, the technical, financial, and human situations of manufacturing.

It's the application engineer's job to provide sound engineering answers to customers' problems, where specialized knowledge is needed, using available equipment. His background is built up largely by direct field work with measurement and control problems — studying them if they represent new applications or analyzing them if control requirements have changed. If a completely new approach is in order, requirements are channeled to research and development for consideration. He must have experience with the instrumentation and process controls pertinent to the particular industry with which he works.

The study of market potentials and development of new markets is the responsibility of specialized engineers who concentrate either in

(*Continued on page 128*)



Most of the men who come to L&N directly from college participate in a training program for a year, receiving practical experience in the various departments as well as post-graduate level instruction in instrument fundamentals.

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The Impact of Government

The current effect of government spending and the prospective influence of government actions on college recruitment is, and will continue to be, marked. So says one who is in a position to analyze the situation and does so with a refreshing candor.

FOLLOWING the all-out scramble for June 1957 graduates, we faced a startling shock in July when the North American Aviation, Inc., having spent 10 years on the Navajo intercontinental ballistic missile (one of several in process), was forced to drop it because the Air Force couldn't afford to continue the program during the economy drive.

Through the summer we watched Congress struggle with the nation's economic outlook. The administration took its position that spending and obligations in the new fiscal year (which began last July 1) would be held, to the extent feasible, at last year's rate. The cutback fell chiefly on the Defense Department, which, working on long-lead-time projects, was caught in a real squeeze.

When outlays for such projects began to soar past earlier budget estimates because of the inflationary characteristics of our present economy, the threat to the planned federal budget surplus (and indeed the statutory debt limitation) brought ominous signs throughout the nation in labor layoffs and in a round of contract cuts and stretchouts (contracts re-scheduled for later delivery) and a general feeling of uneasiness.

In the defense agencies, the necessity for recasting the marginal project planning of last year to meet limitations in financial plans continues to contribute to the uncertainty respecting the final impact of these cutbacks on the nation's economy. Small wonder then that the Pentagon's first wave of cutbacks and stretchouts brought a jittery feeling together with a visible impact on U.S. industry.

In discussing the North American cutback, *Business Week*, in its issue of July 20, states: "Problems of this revolution in weapons, in which missiles supplant manned planes, exasperate both industry and defense planners. The spending crackdown has only brought these problems to the fore faster." And now, to add to this exasperation, we have Sputnik. Its "Beep-Beep" poses many more problems bearing generally on our subject than merely the cryptographic problem of cracking a code.

Can the emphasis on economy in Government defense spending persist, or must we take the risk of continued relatively unlimited spending? Without in any way attempting a prediction, I prefer to continue on the assumption that the drive for economy in Government spending will persist. This also assumes, of course, that there will be no war; and also no economic crisis or depression. Based on these assumptions, how will such continued stringency in Government budgeting affect the supply and demand for our college seniors and graduates in the immediate future?

Keep in mind that these cutbacks can only be marginal. For example, the Government rate of expenditures in Fiscal Year 1957 (ended last June) was on the order of $70 billion per annum. The forecast for Fiscal Year 1958, estimated last January, was for $71.8 billion. In view of the Government's plan to

By

Judson Ford

Director, Organization and Personnel Division, U. S. Atomic Energy Commission, Albuquerque, N. M.

cut back to last year's rate of spending, we are therefore talking about a margin of 1.8 billion over 70 billion.

In terms of the total economy, keep in mind that in Fiscal Year 1957 the Defense Department spending was in the neighborhood of some $38.5 billion, at least $2.5 billion over the original estimate made in 1955-56. It had been estimated that, continued at the going rate, Fiscal 1958 expenditures would have come to at least $40 billion if unchecked. Here we are talking about a margin of 1.5 billion over the Defense Department's spending in Fiscal Year 1957.

Research Is Substantial

Keep in mind in relation to these marginal cutbacks we are talking about, that the Defense Department still accounts for about one-third of the nation's total outlay for research and development, and, according to some estimates, fully half of all basic research in the U.S. Total Government spending in this field has jumped from an average of $245 million a year during World War II to $1.5 billion this past Fiscal Year. Keep in mind that the range of this Government-supported increase includes medical science, social sciences, personnel and training research, materials research, and other general sciences such as physical, engineering, and biological.

In order to provide myself with something of an informal "Guesstimate" about the effect of this on some sample of Government-supported college recruitment, I asked for some observations on the part of personnel administrators among the contractor organizations which are engaged in the atomic weapons business and employ in total something less than 30,000 people.

All of these organizations have been expanding during recent years and as a group have had significant annual requirements for scientific, technical, and professional personnel at the B.S., M.S., and Ph.D. levels, and also for degree-holders with experience in their fields. All have experienced the extremely competitive difficulties that have characterized college recruitment during the past years. In the cases of the Los Alamos and Sandia Laboratories, their annual requirements have been substantial, and consequently their recruitment programs must be extensive, well-organized, and well-advertised.

While all of these organizations are unlikely to continue to increase their total strength from now on, none of the personnel officials are willing to predict that recruitment for acceptable degree-holding candidates, either with or without experience, will be less difficult during the coming years than in the past. Only two, Holmes & Narver in Los Angeles and Monsanto Chemical in Dayton, Ohio, have observed any tendency toward a more fluid market for scientific, technical, or professional personnel. Note, however, that in Los Angeles there had been the North American cutback. In Dayton, General Motors had reduced its force.

However, most significant among the observations in this roundup of the atomic weapons industry is that almost without exception termination rates for these classes of personnel are definitely down. This means, of course, relatively fewer vacancies; and to the extent that recruitment plans allow for anticipated turnover, continuation of this tendency toward less movement between firms will relax the demand for recruits accordingly.

A recent assessment of related employment trends in the August 24 *Business Week* states: "This year's defense cutbacks have eased the labor shortage some—but not so much as expected. Stepped-up company and apprenticeship training programs account in part for shrinking Want Ad columns, but there's still a crying need for highly trained machinists, tool and die makers, and engineers of all kinds."

Based on all this, I am willing to venture some conclusions respecting the immediate future.

1. Certainly the bottom has not dropped out of the market! There is no reason to expect real difficulty in placing college graduates. The graduate will be able to get a job of his choice.

2. There may not be as much for the graduate—as many firm offers to choose from. Possibly the personnel officer, with terminations declining, will be situated to be a bit more choosy himself. This can only result in a healthy situation. A situation in which the graduate does not grab for the highest salary rather than the right job for development in his field. And the personnel officer will not grab for a candidate just to fill his hiring quota. There will be more discrimination in selection on both sides.

3. These tendencies may result in a ceiling on the rather plush entrance salaries which competition for the graduates has forced during the past few years, particularly for engineers.

4. Many non-defense industries, unable in the immediate past to compete for top college talent with defense industries paying plush rates, will benefit by ability to absorb more college-trained personnel.

The Outlook For Placement

If there is any question in anyone's mind that placing college graduates is not going to be a problem next year, only a few facts about the outlook are needed to dispel this doubt. I have found it nowhere more succinctly stated than in a recent Viking Press book by Brown, Bonner and Weir of the California Institute of Technology entitled, "The Next Hundred Years." Since medical science has not yet increased our life expectancy to the 120 some-odd years the graduate would need to contemplate being employed 100 years from now, let's confine ourselves to, say, the next twenty-five years or so.

These authors established that, in our economy by 1970, 17% of 22-year-olds will obtain first degrees. This is a projection that began in 1920 with 3%; 1930-6%; 1940-

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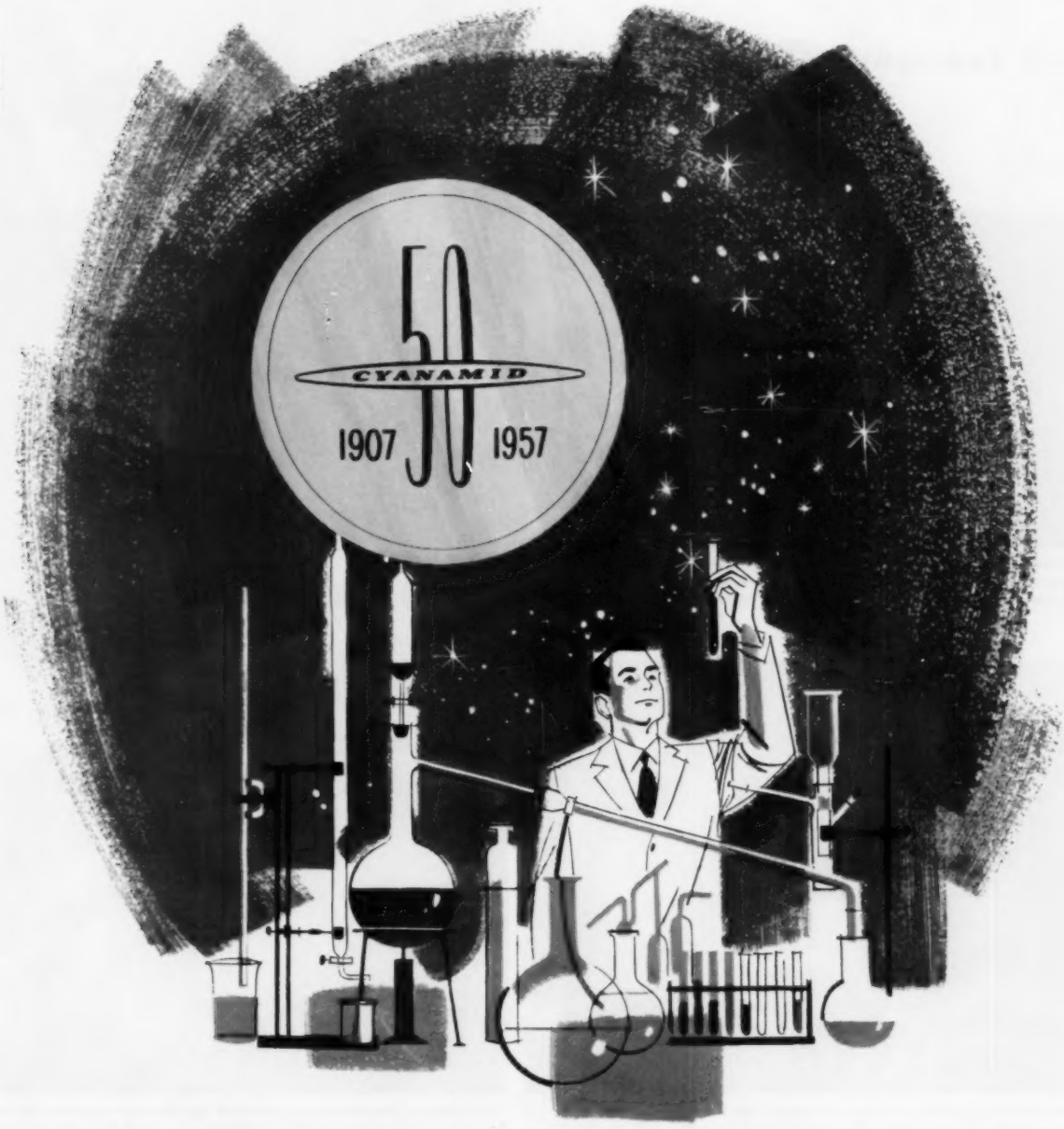

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THE P&G SUMMER WORKSHOP—

Preview of Industry

From the roof of a P&G synthetic detergents making plant, one of the company's design process engineers showed Workshop participant Bollinger the major process and production buildings at huge Ivorydale.

Bollinger, left, met his fellow Workshop members at the Labor Day afternoon enrollment session. Here his Engineering Division coordinator introduces Hugh Warner, MIT, Research and Development participant.

Work on their problem of how to improve the temporary storage tray drive used in the production of Ivory Soap took time and study by Pierre Mamin from Paris, Bollinger, and David Blatchford from Penn State.

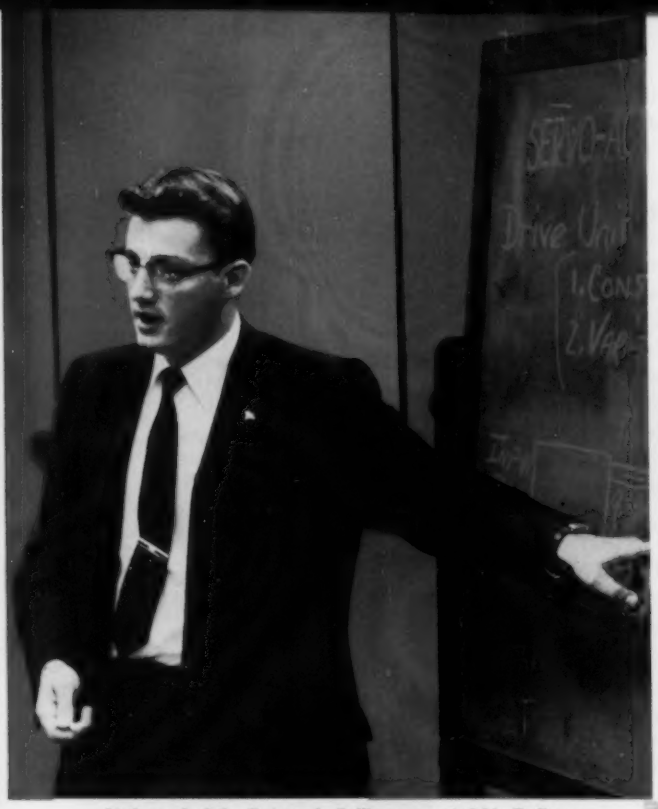
The individual workshops are kept small but there are opportunities for the group to be together. Vice Presidents J. M. Ewell, Manufacture, and J. G. Pleasants, Research and Development, spoke at this noon meeting.

Designed to "capsule" a summer, and a good deal more, into two weeks just before the start of the school year, the new Procter and Gamble Summer Workshop is a shining example of what a well-devised program can achieve. In addition to serving the firm's interests, it leaves the student with a sense of accomplishment and a knowledge of industrial teamwork.

The place and time: March, 1954.

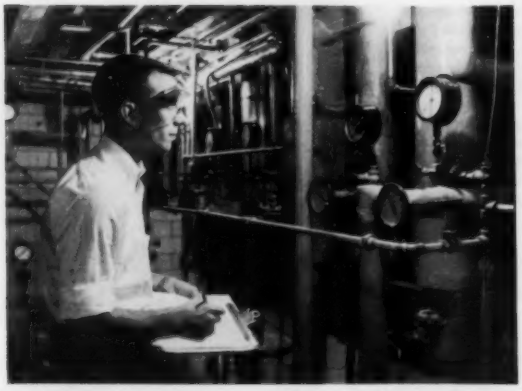
The questions: What are the objectives of a summer employment program? Who should be included? How should an effective program be organized? How do you get the "right" men in the program? These are the concern of the three members of Procter & Gamble's technical training group as they sit down to examine the company's summer training program.

Long "sold" on the value of em-



At the end of the first week, Bollinger reported his findings on the storage tray drive to the Workshop members and leaders. All reported orally to the group and submitted a written study also.

The problem assigned to Bollinger and his two fellow participants was considered in three ways. First they sought a minimum solution, then one of major alteration or redesign, and, lastly, the "ideal" method.



Hugh Warner's problem dealt with the production of synthetic detergent paste; trying to apply a modification for use in actual production. Here he checks readings in pilot plant production.

The after-hours bull sessions were many and profitable, as the students met in each other's rooms to discuss the day's events, compare notes on their various problems, and, perhaps, get new ideas or suggestions from their fellow workers.

ploying college men the summer before graduation as a time for men and company to find out about each other, the company senses that its all-summer program is not completely filling the bill. Too many factors are competing with summer work in industry. Military camps and cruises, summer school, and "have to stay home and earn the most money I can" are the most frequent reasons given for declined summer offers. It's easy to hire college men for the summer; the problem lies in getting the right ones.

The answer which was born at that meeting is the company's Summer Workshop, designed to "capsule" a summer, and a lot more as well, into two weeks just before the start of the school year. The two weeks gives the student a concentrated industrial experience in the types of problems and decisions management must face regularly.

The idea is simply this: Hire college men one year from their final degree for participation in a Workshop centered on a specific field of interest—factory management, research and development, engineering or industrial engineering. Keep the individual Workshops small, 10 to 18 men, to insure maximum participation. Give the students an organized orientation to industrial manufacturing by showing them the company's meth-

ods of operations. Within the Workshop groups, assign each man individually to specific pertinent problems under guidance of members of company management. Pay each participant a regular salary during the two weeks, plus travel and housing expenses.

How the program works in actual practice can best be illustrated by following one of this year's group, John Bollinger of the University of Wisconsin, through two busy weeks this past September. John, a mechanical engineering graduate in June, 1957, heading on to a year of graduate study at Cornell, was selected for the Engineering Division Workshop.

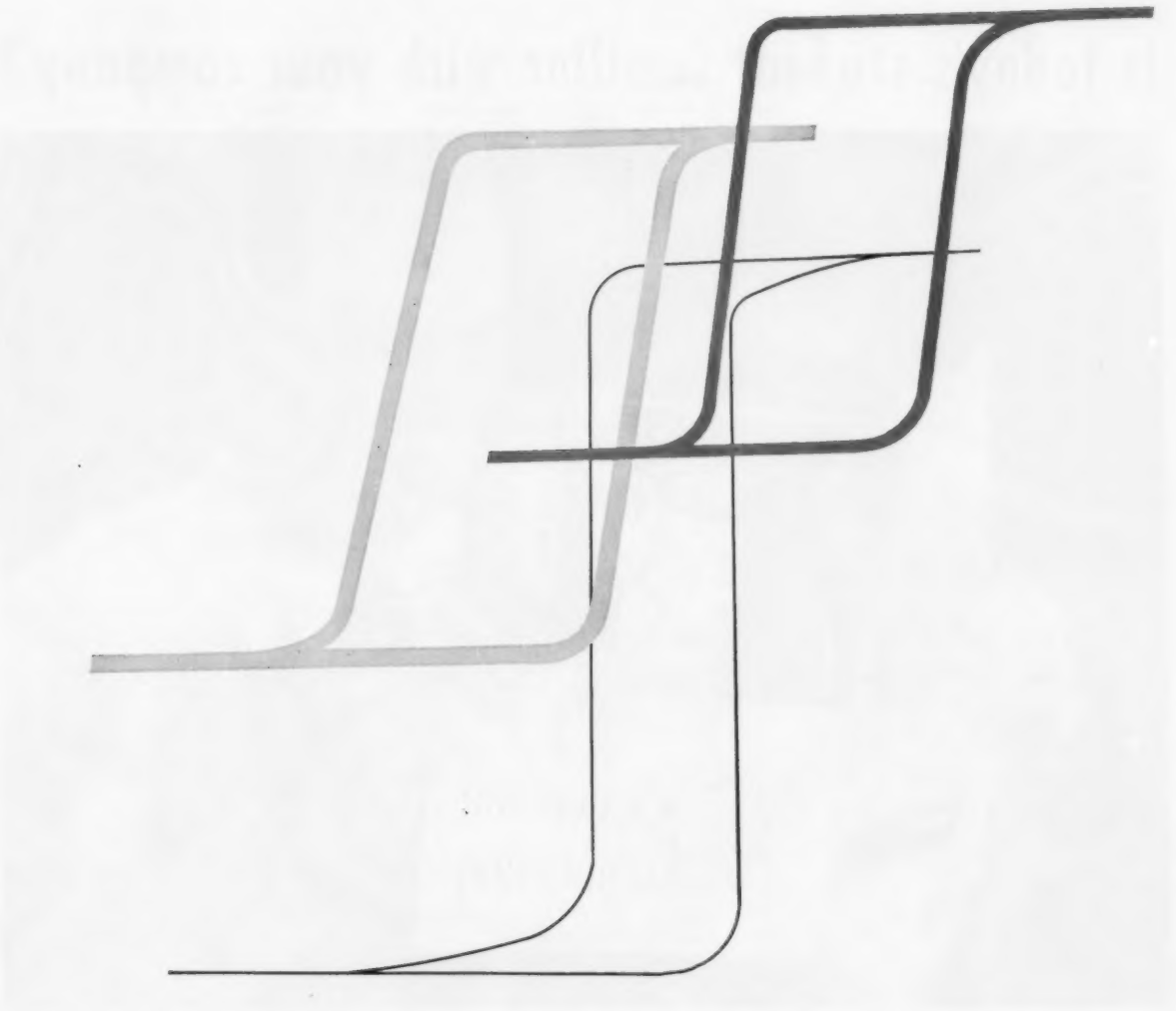
As men gathered at P & G locations in Massachusetts, Texas, and California, John joined 54 other students at a hotel in Cincinnati on Labor Day afternoon. The coordinator for the Engineering Division Workshop, a construction engineer, met John and introduced him to many of the others gathering from colleges and universities throughout the country. Each signed employment and personnel forms for enrollment and received a notebook with a schedule of the two weeks and information about the company and about Cincinnati.

Early Tuesday morning the Workshop men headed for the company —17 of the group to the Ivorydale plant, and the remainder to the Research and Development, Engineering and Industrial Engineering Workshops in the company's manufacturing and research headquarters building. After a welcoming talk and briefing into the role of his field in company operations, John was assigned his problem and introduced to his sponsor, a technical member of the company's management responsible for the area covered in the problem.

John, with David Blatchford of Penn State and Pierre Mamin of the Ecole Centrale des Arts et Manufactures, Paris, was assigned to develop a new tray drive for use in the Ivory Soap production line. First step for the three was to accompany their sponsor, a mechanical development engineer, to the Ivorydale plant to get a close look

(*Continued on page 124*)

In the panel at right, Workshop participants listen to an explanation of the synthetic detergent making process; check data recorded during the operation of a vapor-phase chromatograph; and compare notes on a problem in the food products development lab. At bottom, a participant in the Factory Management Workshop watches as an operator weighs a finished product. His special problem is to investigate the excessive dust and product loss through the vacuum filter system on a production line.



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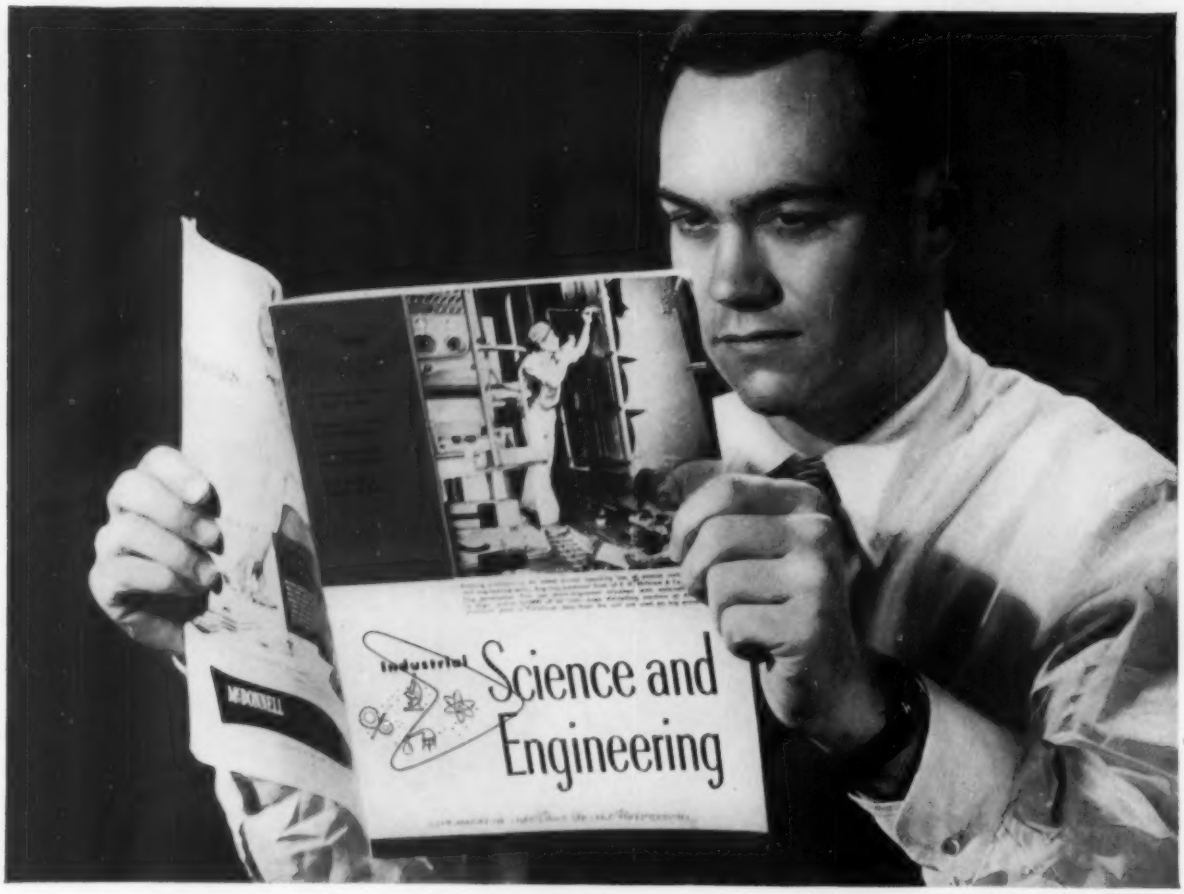

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Industrial Science and Engineering

THE MAGAZINE THAT LINKS COLLEGE AND INDUSTRY

PLACEMENT IN THE UNITED KINGDOM

A review of techniques and procedures followed in English Universities as reported by the University Counseling and Placement Association of Canada.

BY J. E. ANDOFF

Director of Placement and Guidance, McMaster University

EACH university in the United Kingdom has what is called an Appointments Board made up of representatives of each college plus several officers ex-officio and a number of co-opted members from industry. The Board meets one or two times a year for such purposes as annual reports; in the meantime the work of the office is under the direction of its "secretary." The latter has assistants and a clerical staff whose numbers depend on the size of the university.

The primary concern of the Appointments Secretary at most universities in Great Britain is full-time employment placement of both men and women graduating students. Graduate students are also assisted. Part-time and summer employment work for undergraduates is frowned upon, except in the form of vacation industrial training posts for science and engineering students. Arts students are expected, during the vacation period, to study, or broaden their education through travel.

Representatives of employers visit the universities in large numbers during the winter months. There, as in Canada, the greatest demand, at present, is for science and engineering personnel. The operation of the office varies from university to university; for instance, at Oxford, the office gives an individualized service to candidates and employers. The students of the graduating year, only, register voluntarily, and are charged a fee. The office sends notices marked "confidential" to registrants who may be interested and considered recommendable, and it sends a supporting letter to the company on each individual recommended. The employers visit Oxford to interview the students who have applied.

At Durham University, however, all first year students, except medical and dental, are met in a group, at the beginning of the year, for registration with the Appointments Board Office. A card is filled out and the services of the office are explained. Individual notices are then sent to each student asking him to come into the office to arrange for an interview with the Appointments Officer. He may come back at any time later to discuss matters concerning his career or summer vacation training. The student is again called in the autumn term of the final year for an interview.

In December, a summary of intended employer visits and other information is prepared and sent to each student. Supplementary lists are sent at a later date. Notices are posted on bulletin boards and individual notices may be sent. Students are advised what they must do about reading company literature, filling out forms, conducting themselves in interviews, and writing letters of application. The Appointments Board Office gets marks on the student automatically from the Registrar's Office; also written reports from the tutors in December. The reports from the tutors are sent on all students who are registered for employment regardless of interest in any particular job.

All this information is used as a basis for the reports of the Appointments Board Office to employers. The secretary of the Board or one of his assistants discusses with the employers the qualifications of the students interviewed and sends a written report later.

Birmingham sends a letter to each graduating year student inviting him to register for employment or to report his plans to the office. The secretary speaks at meetings of the

students of each course regarding the opportunities in employment and the services of the office and encourages the use of the occupational information library which is attached to the office. He interviews every student who registers and makes notes on his card.

Notices of employer visits are put up on departmental bulletin boards, and the students interested are asked to sign. A timetable is drawn up and a copy is sent back to the department concerned. In the University of Wales, registration is voluntary and notice sending is routine according to course and interest, supplemented by personal contact.

At Edinburgh notices are sent only to those not attending the University, and the secretary gives reports on the students to the employer before the latter interviews the applicants.

In general the operations of the Appointments Board Offices in the United Kingdom can be summarized as follows:

Registration for employment is done either in groups or individually by arrangement, or voluntarily, mostly in the final year, except for those who are interested in summer vacation training courses. The registrants are usually interviewed by the secretary or one of his assistants before the employer interview. Students are notified of the employer visits and of vacancies by bulletins, mailed or distributed, by notices on bulletin boards, or by confidential letter.

Reports on the students are received from the registrar, tutors, and the instructors and are made by the secretary to the employers. Reading rooms are provided for the registrants so that they can acquaint themselves with the companies and do other reading and writing related to the task of finding employment. At some universities the services are free, at others a charge is made ranging from 1 shilling at Edinburgh, "to discourage frivolous registration," to 10 shillings for graduate students at the University of Wales.

The Appointments Officers in British universities showed an approving interest in the counselling services provided in Canadian universities. In Britain small groups of students are usually assigned to "moral tutors" for advisory services but at the University of Wales there are career and welfare officers at each of the affiliated colleges and it is their function to provide counselling services to their students. At Glasgow, the Secretary of the Appointments Board and his assistants also act as counsellors.

My visits with the Appointments Board Officers in Britain have left the impression that we as counsellors and placement officers can profit from the experience of the universities in Britain. They on the other hand are interested in developments here and in obtaining for their students information about training and employment opportunities.

PRATT & WHITNEY PUTS IT IN BLACK & WHITE

Recent attention focused on the principles and practices of recruiting suggests interest in the following instructions which are presented to each student visiting Pratt & Whitney. It is one of the few of such instructional sheets known to be in use and is reproduced here by permission of the Company.

GUIDE FOR THE PREPARATION OF EXPENSE REPORTS

When a person visits Pratt & Whitney Aircraft at the request of the company, he is entitled to the same expense allowances as accorded Pratt & Whitney Aircraft employees while engaged in travel on company business. Reimbursement is intended to cover the actual expenses required to complete the recruitment trip. Expenditures for entertainment, tours, and other personal activities should not be included. When a visitor elects to visit other industrial firms on the same trip, it is expected that expenses will be prorated among the companies concerned.

The following will serve as a guide in the preparation of expense reports:

Mode of Transportation

In order to reduce time spent away from campus, students may select the most convenient means of transportation. Trips will normally be made by public transportation, with most trips expected to be by airline or rail.

Hotel

Most plant visits will require one overnight stay at a hotel in Hartford and occasionally, where transportation difficulties arise, a second night. Hotel charges shown should be for room rent only and not include meals or other services requested.

Meals

This item should cover meals actually paid for, including tax and tips.

Local Transportation

Include airport limousine service, buses, local or suburban trains and taxis where used.

Baggage Service

Tips normally allowed cover baggage transfer, when used, at the hotel, airport, or travel center. Checking service charges may be included.

General Information

As a guide to visitors, personal activities and the following items are not considered normal "business expenses": 1. Entertainment, tours, cigarettes, magazines, etc. 2. Insurance, interest on loans, excessive tips. 3. Personal phone calls except in emergency or for recruitment business. 4. Hotel stopover at cities other than Hartford except where required by transportation schedule. 5. Valet expenses except under special circumstances.

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P.S. | Min. | Occ. Trs. Memo at Analysis | FILE NO. | A | REG'N. | * | Min. | Occ. 1011 Memo | CLASS. | Area | DEPT.

TECHNICAL EMPLOYMENT ACTION CARD

P.S.

DATE OF ACTION: MONTH | DAY

FILE NO.

W.I. DECIDE / REPORT: MONTH | DAY

CLASS

CIRCLE ONE

9. Close (code)
8. Invite (area or req'n) *
7. Inv. Rej. (area or req'n) *
6. Interviewed (area or req'n) *
5. NTD (area or req'n) *
4. Offer (req'n) *
3. Offer Rejected (req'n)
2. Accepted (req'n)
1. Reported (req'n)
0. Reassign (new P.S.)

RATED

PUNCH

1 — 2
1-2 — 3
2 — 4
2-3 — 5
3 — 6
3-4 — 7
4 — 8
4-5 — 9
5 — 0

41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

P.S. CODE	AREA CODE	CLOSE CODE
1. Baker 2. Clark 3. Schmidt 4. Strauser 5. 6. Peacock 7. Gastings 8. Transfers 9. Pre-arranged transfers	COMPANY 21. Mgt. & Staff 22. Sales 23. Tech. Serv. 24. Research 25. Spec. Assign. DIVISION 31. Mgt. & Staff 34. Research 35. Spec. Assign. 36. Production 37. Mech. Serv. 38. Main Laboratory 39. Engineering	1. After screening interview 2. After letter of application 3. After G.R. received 4. G.R. not returned 5. Close Relations 6. Available later 7. Unavailable before invitation 8. Refer to other division 9. Refer to Personnel

170-36 Printed in U.S.A. FB-57

DOW WRITES THE TICKET

As the recruitment job becomes increasingly demanding of time and personnel, one solution to the growing load is the introduction of data processing techniques. Dow's Midland Division has done just this and very much likes the results which it has achieved.

WITH help from an electronic computer across the street, placement supervisors at The Dow Chemical Company's big Midland, Michigan, Division are streamlining office procedures.

Before most job applicants knock at the door, the computer has made a note of their coming. It clicks off their progress from initial interview to job decision and reports back with dispatch.

Dow has applied data processing techniques to employment applications—and it likes the results. Speed, efficiency, and a variety of useful survey information have appeared since the Technical Employment Department plunged into electronics a year ago.

The new procedure means that:

1. Any item of data need be recorded once and once only.

2. That item is permanently stored in automatically accessible form.

3. The item can then be printed on any form in any way desired for any use. It may be utilized for any kind of calculation or for the initiation of action automatically, without the need of manual transcription, and at extremely high speed.

In the highly mechanized chemical industry, help from machines is long standing. Dow employment specialists borrowed techniques from sales analysis and inventory control and put them to work in terms of people.

"If we hadn't," says Dr. Gordon Clack, division technical employment manager, "we would have been up to our ears in paper work. The whole operation would have suffered."

In recent years, technical employment at Dow has expanded swiftly. Employment has more than doubled since World War II. Requisitions pop up for 400 to 800 college-trained people a year, with about half filled by transfer within the company. Sixty Dow people—from process engineers to technical writers—leave their regular jobs for a few days each year under the guidance of Technical Employment to seek new employees on the campuses.

The recruiters work through four placement supervisors in the Technical Employment Department. Each placement supervisor coordinates the recruiting in a geographical region. He is also in charge of the selection and placement of new technical employees within a group of departments. A fifth placement

Also electronic is this equipment that operates like the old player piano; the operators, two of whom can do the work of six typists, can select any of 30 standard letters or even individual paragraphs, and all are personalized.

Dow's switch to electronic processing and use of an IBM 650 computer, a medium speed machine, has meant improved office procedures, easier and more convenient filing, and ready access to all information. Other benefits have been quickly-done statistical analyses, exception reports, and "feedback" of information to the recruiters and the placement officers.

supervisor is responsible for transfer of technical employees.

By 1956 some 10,000 employment applications per year were streaming into an office that was formerly handled by two to three men. To meet this rising tide, Dow aimed for a centralized record system with decentralized handling.

Dr. Clack, a physical chemist with years of research in his past, ordered more research to deal with the future. He and Bruce L. Wallace, a Korean War destroyer escort officer with a degree in business administration, studied electronic business machines and developed a plan. They got a go-ahead from management.

"The situation demanded some sort of action," Wallace said, "and we wanted a system capable of expansion."

Placement supervisors and the Dow Data Processing Department, across Ellsworth Street in Midland, labored late and early to set up the system and make it work.

"We wanted our reports to be understandable to our recruiters and others without involving a great amount of reference to other sources," Wallace said. "This required considerable alphabetic output which in many cases taxed the capabilities of the equipment. It was a rough assignment, and only through the perseverance and ingenuity of men like C. W. Snover in Data Processing were we able to accomplish this.

"Hardly a day went by that we didn't change something. Now with a year's experience, we're ready to settle down. We think our procedure is pretty well mechanized and that it offers virtually unlimited expansion possibilities."

Dow technical employment people think of their system as approaching "dynamic accounting with all the controls we need on a daily basis and all the analyses we need to keep us on target."

A keystone of the operation is interpreted IBM cards that are punched in duplicate. One is sent to the computer. The other, torn off along perforations to form a 3 by 5 inch card, becomes part of an indices in the employment office. These cards, filed alphabetically, contain the name and basic information about every job applicant and every past and present Dow employee as well. In addition they show the file number, which is assigned successively to each new employment application.

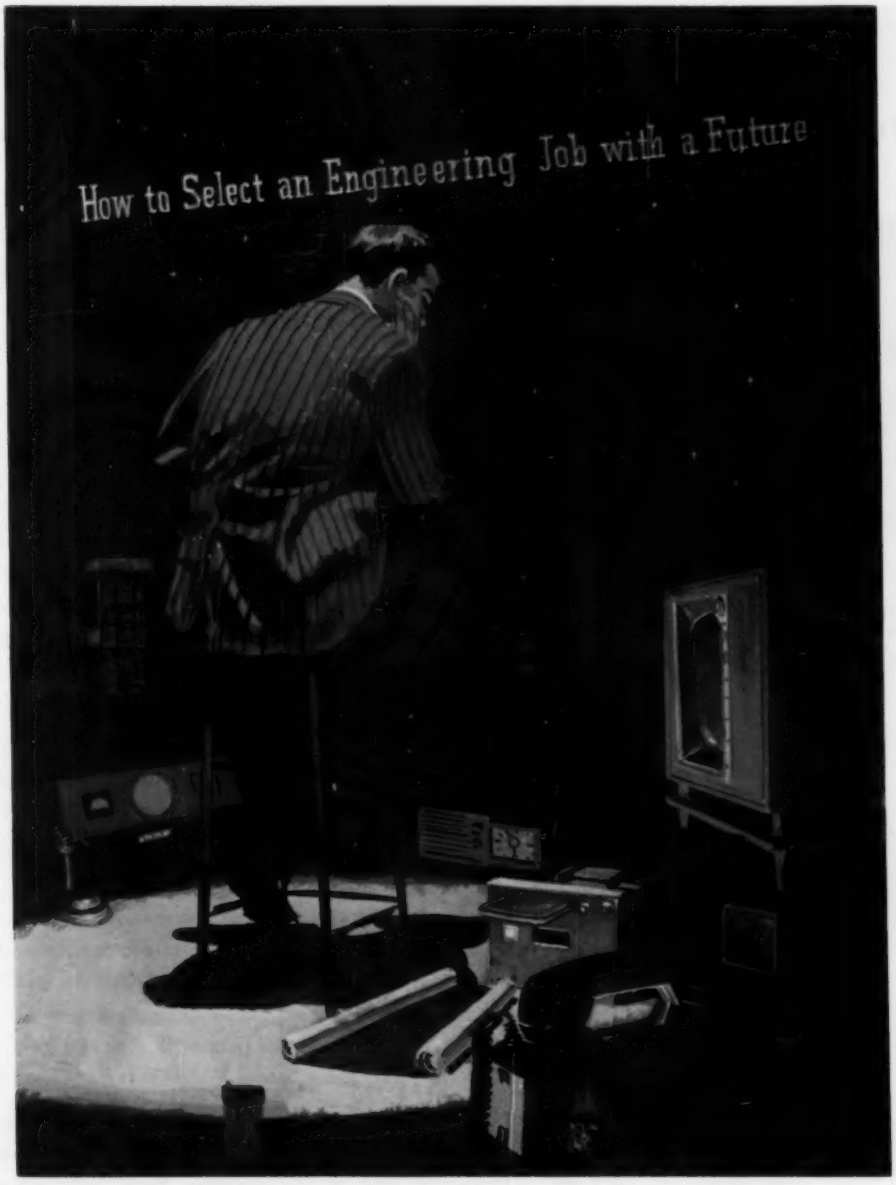
A second basic form for data processing is a check-size "action card" which informs the computing machine of each step involving a prospective employee.

First step, above left, is key punching the cards which will be fed to the computer; at right above, a placement supervisor completes the "action card", the second in the series, which informs the computer of each step taken. The final picture shows the alphabetical index in the Technical Employment Department, which records the file numbers for the cards stored in the computer. In the center picture are the men behind Dow's turn to IBM processing, Dr. Gordon Clack, the division technical employment manager, and Bruce L. Wallace, standing, as they check the survey information they need.

The procedure works like this:

Mail is opened by a receptionist, stamped as to date and time, and checked with the office indices. If a file exists, a secretary notes the number, attaches the file, and sends it to the appropriate placement

(*Continued on page 116*)



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INTRODUCING:

The New Presidents

The new regional association presidents, from left above, are Alice Davis of Smith College, who heads the ECPO; Howard Lumsden of the University of Tennessee, SCPOA president; B. H. Amstead from the University of Texas, the Southwest Placement Association; David Robinson of Baldwin-Wallace, MCPA; and Paul Sherwood, MAPOA president, from the University of Pittsburgh.

Miss Alice Davis, new president of the Eastern College Personnel Officers, became Director of the Vocational Office at Smith College in the fall of 1947 and has had several connections with Smith since her graduation with a Bachelor of Arts degree in 1930. She was a director of the Alumnae Association from 1937 to 1940, later served on the War Service Committee of the Association and was chairman of the scholarship committee of the New York Smith Club for five years.

Following her graduation from Smith, Miss Davis taught mathematics and physics for 3 years at Mrs. Day's school in New Haven, Conn., and at the Spence School in New York for nine years before entering the Navy. Early in the war she felt the government's need for people trained in the sciences and offered her services as a physicist to the Navy, as a result of which she became a civilian employee in the Washington Bureau of Ordnance in June, 1942.

Two months later she arrived in Northampton as a member of the first group to be indoctrinated at the U.S. Naval Officers Training School (WR) for the purpose of training future officer candidates. Following a month's duty in Northampton, she was ordered to Mount Holyoke College as senior woman officer when the training unit was established there in November, 1942. Other war service of Miss Davis included duties at the Naval medical center at Bethesda, Md., where she was Women's Reserve representative and acted in an advisory capacity to 1400 Waves, and later, service in Boston as Women's Reserve district director for the First Naval District. She was separated from the Navy in June 1947 with the rank of full Commander.

■ David Robinson, the new president of the Midwest College Placement Association, became, in August, the Dean of Students at Baldwin-Wallace College in Berea, Ohio. He went to Baldwin-Wallace from DePauw University where, as assistant dean of students, he had a multitude of duties, from serving as Director of the Placement Services to coordination of all men's activities, and responsibility for fraternity relations, the University absence program, the high school seniors college conference held by the University, rush, veteran's affairs, discipline, housing standards, and many more.

Preparation for all that includes a bachelor's degree, with a major in psychology, followed by two more degrees, the master's and doctorate in education, all from Indiana University. Specializing in guid-

Key to Regional as well as College Placement Council operations is the calibre of Association presidents in whose hands rests responsibility for the upgrading of the placement function in the current year.

ance and counseling and educational psychology, he received some first experience as an undergraduate counselor at Indiana; then served as head counselor for various of the men's residence units. He also found time to teach in the reading and study clinic at the University.

Military service was in the Army Air Force from 1943 to 1944, with a commission as a medium bomber pilot.

Active in community affairs as well as several professional organizations, Dr. Robinson belongs to many organizations, including the National Association of Personnel Directors, the American Personnel and Guidance Association, the National Vocational and Guidance Association, and many more. He is a past president of the Indiana Institutional Teacher Placement Association.

■ A native Pennsylvanian who was educated in Pennsylvania and has long been active in the educational field in Pennsylvania, Paul M. Sherwood, is the new president of the Middle Atlantic Placement Officers Association. Now bearing the dual responsibilities of Associate Dean of Men and Director of the Men's Placement Bureau at the University of Pittsburgh, Dr. Sherwood holds both his master's of education and his doctorate of philosophy from that institution.

Born in Farrell, Pennsylvania, the new MAPOA president took his undergraduate work at Thiel College, where he received his A.B. in 1940. He is also a former education instructor at Thiel. Prior to joining the Thiel College staff, he taught English and science at the Greenville, Pennsylvania, high school, but that was interrupted by the Second World War. During the war, from 1942 to 1946, he served in the Army Air Force as a second lieutenant. A glider pilot, he spent from February, 1944, to November, 1945, in the European Theatre of Operations. He is now a member of the inactive reserve.

Professionally, Dr. Sherwood lists his main hobby as secondary education; non-professionally, he enjoys reading, gardening, and music. He is a member of Lambda Chi Alpha social fraternity and the F. and A.M.

■ Howard H. Lumsden, new president of the Southern College Placement Association, brought a background of experience in industry, education, and, for a short time, government, to his present position as placement officer at the University of Tennessee.

A native of Knoxville, he attended public schools there before entering the University of Tennessee, from which he was graduated in 1943. He worked for a short time with the Tennessee Valley Authority, before entering the Army that same year. Released from the service in 1946, he became administrative assistant to the dean of the College of Business Administration, largest college on the Tennessee campus, and also taught economics.

The next year, he left the University to become a member of the sales-statistics staff of the P. H. Knitting Company of Winston-Salem, where he remained until called back to Tennessee in 1951 as placement officer.

Mr. Lumsden, another who is quite active in church, fraternity, and civic affairs, as well as in the placement field, is a former district grand master of his social fraternity, Kappa Sigma, and a national alumni commissioner of the fraternity. A director of the Knoxville Symphony Society, he is also a member of the Men's Cotillion and of the "Y Men's Club" there.

Still other activities include Phi Kappa Phi, a national scholastic fraternity, and Omicron Delta Kappa, men's leadership organization. Since returning to the college campus, he has returned to studies as well and to work on his master's degree.

■ Dr. Billy Howard Amstead, new president of the Southwest Placement Association and assistant to the University of Texas engineering dean, handles the busy science-engineering placement office, arranging interviews for company executives who clamor for the critically-few graduates in those fields.

Dr. Amstead also is an associate professor of mechanical engineering and Defense Research Laboratory engineer. His research interests center on ramjet missile systems, heat transfer of liquid metals, manufacturing processes and quality control, and he has written numerous technical papers.

He received Bachelor of Science, Master of Science and Doctor of Philosophy degrees in mechanical engineering from the University of Texas.

Dr. Amstead is active in local civic and church work, being a member of the board of directors of the American Red Cross and Cerebral Palsy Center, and is Sunday School superintendent at the University Presbyterian Church and state vice-president of the Texas State Exchange Clubs.

He served as an ordnance officer in the U.S. Navy during World War II and formerly was employed as production manager of the Mission Manufacturing Company in Houston. He is married and has two children.

CONCERNING "ANNUAL" LISTINGS

Business and industrial firms or governmental agencies recruiting on American and Canadian campuses are listed without charge in the Council's official publication the College Placement Annual.

Those organizations which were not listed in the 1958 issue and desire to be included in the 1959 number of this occupational directory may have their firm "nominated" by any placement office where they recruit regularly. Firms listed in the current number will automatically be invited to participate again.

Full-page advertising is also available in the Annual but only on request. Listings in the publication are gratis and *not* contingent upon the contracting of advertising.

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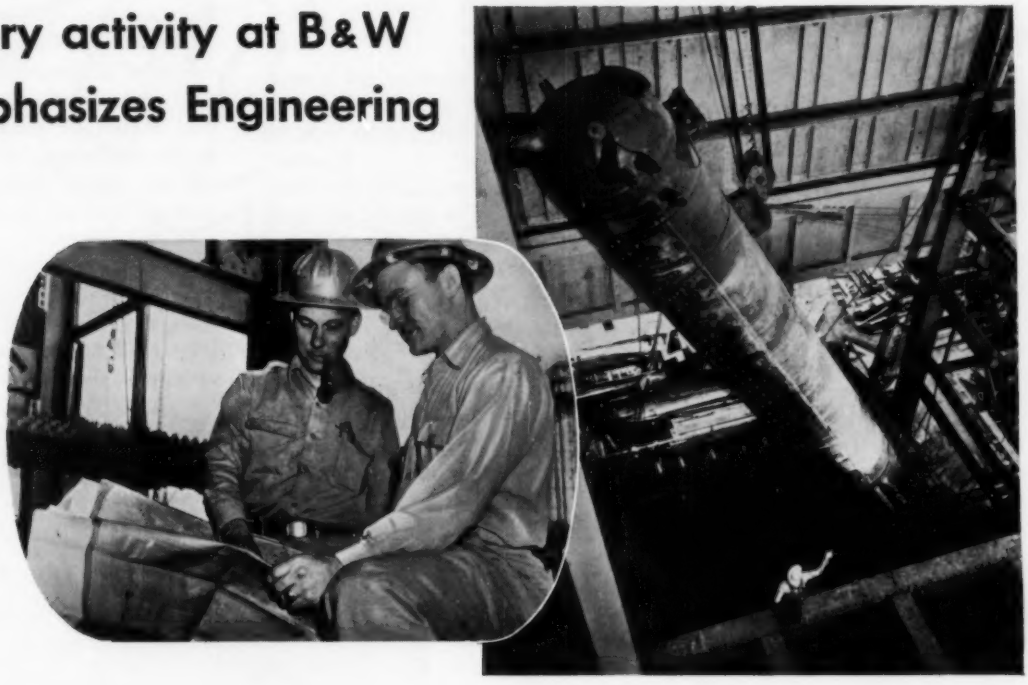

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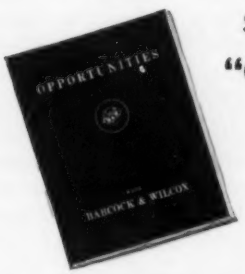
B&W PRODUCTS AND ACTIVITIES serve almost every industry. Ask any member of your engineering faculty about B&W's engineering, business, and financial reputation.

For details on what your future can be with B&W, write for "Opportunities with Babcock & Wilcox," the Babcock & Wilcox Company, Student Training Department, 161 East 42nd Street, New York 17, N. Y. Or ask your placement office for a copy when you talk to him about an interview with B&W representatives on your campus.



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PE-8

What's Your Line?

By JOHN SHEA

Feature writer, The Illinois Wesleyan "Argus"

■ "Don't call us, we'll call you."

This is the classic phrase that so many young men hear while job hunting. But IWU senior men and women can easily forget it by taking advantage of the interview program offered by the Placement Bureau. This year over 60 company representatives are expected on campus.

College Placement Annual, 1958, is a new publication that is going to augment the already very complete service offered by the Placement Bureau. It is a 262 page manual which contains not only soup to nuts, but an after-dinner cigar, as far as employment prospects are concerned.

Do you really know who you are? Personality is one of the points considered by an employer, and the College Placement Annual gives you a general outline and some helpful pointers to help you gain an insight into yourself and your idiosyncrasies.

Remember all those dreary hours you put in on English Composition and Rhetoric? Well, they'll pay off now. Pointers on how to write a letter of application and what to include in it are given. Answers to inquiries are also very important. Quite often, your correspondence is the evidence in deciding on your application.

"In Canada it is more important to be able to change quickly with variations in product demand than it is to save by volume mass production. The result is a premium on individual initiative and a recognition that the entire labor force is one of the country's most valuable raw materials." J. K. Bradford, placement director of the University of Toronto says this in his essay *Thinking About Canada?* Collegiate job hunters get the low-down on Canadian employment opportunities (which are practically unlimited) in this article.

The *College Placement Annual* also has a separate list of Canadian companies that gives the name of the company, its location, and the type of job performed by the company. Next, a list of those positions which the company desires to fill is given, and the number of employees the company hires is included so that you may see the approximate size of the place you are entering. The date that the company was founded is included also.

Just a minute, girls, you have not been forgotten. There's an article in here just for you. So beg, borrow, or steal one of these Annuals, because there are plenty of interesting little tips on how to land that job. Remember, jobs have bosses, bosses are men, and if one can land a job, one can land a boss. So, like I say, beg, borrow, or steal. But not right now! Sit still until I finish. Wow!

How long do you expect to work? Do you plan to quit and get married in the next four or five years? What is expected of the young miss with a degree? All these questions are answered in Joan F. Bishop's article *Young Women—Choose Well.*

Have you ever started an interview to find out that the recruiter knows more about you than you do, and you know nothing about the company he represents? Those days are gone forever. The *College Placement Annual* gives a complete listing of all companies seeking new employees. A very thorough thumbnail sketch of each company is given, including the name and address, name and title of the person to direct your correspondence to, the service performed or the article manufactured, and the date the company was established. Also, the number of employees is given, and a list of the types of new employees they are seeking.

Even though it always seems as though there are too many government workers, the United States Government is hiring right and left. A list of government positions, just like that described above, is included for graduates.

There is also a listing of employers by occupation. The number of occupations is appalling! I think that the only job I didn't find was "Chiclet Polisher."

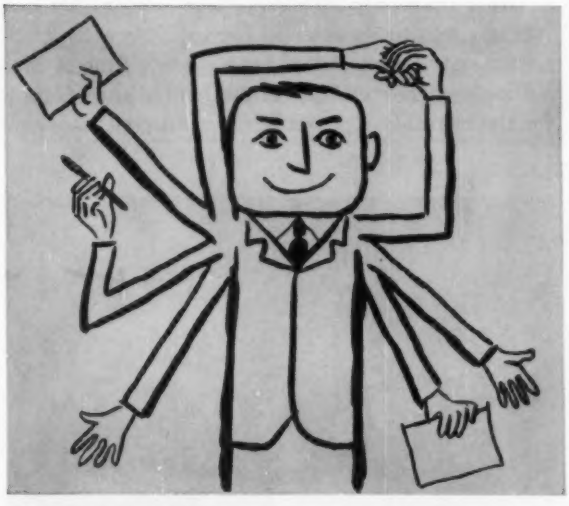
To show the completeness and thoroughness of this *College Placement Annual* an index of employers by geographical location is given. Cities of the United States and Canada are included under the alphabetical arrangement of states and territories.

There's just one fly in the ointment. These Annuals aren't available now. They will be given out at the meeting of all those students participating in the February Interview Plan. This meeting will be held sometime in December before Christmas vacation begins. The Annuals will be accompanied by other pertinent literature at that time, so don't storm Mrs. Watt's office; it's useless. Just try to be calm and collected for about six weeks, and you'll feel that your patience has been well rewarded when you get your copy of *College Placement Annual, 1958.*

A good deal of interest has been expressed in student reaction to the Council's new College Placement Annual. When the above from Illinois Wesleyan arrived, it seemed to sum up the student viewpoint—and provide a few chuckles in addition.

THE JANUS or two-way stretch personality. Makes an excellent claims adjuster because he can see both sides of a situation without being two-faced about it. These able fellows have the added faculty of being able to see where they have been and where they are going (which is plenty far if they work at The Home).

KERMIT THE HERMIT Lives reclusely. Resents backslappers but loves all kinds of figures—the perfect-36 type and the slide rule kind. Makes a wonderful accountant, statistician, or expense analyst. Our business is loaded with the decimals and digits this guy needs to keep him happy. Our main office and 70 branches are all real nice and modern, too.



HANDSHAKER Specially equipped by nature with all that it takes to be friendly. Very handy at helping people with their problems. Can keep several balls in the air at a time. As a combination of field representative, salesman and serviceman with a good insurance company, this fella can grab himself a fistful of future. In fact several.

THE WELL-ROUNDED MAN Not as much of a "type" as those other fellows and certainly not a square. Usually makes an excellent underwriter because he's at home in all kinds of circles. Likes to keep up with the changes that make our fast-moving business tick. Lots of opportunities at The Home for a chap like this to become a wheel.

IT TAKES ALL KINDS . . . *WE NEED ALL KINDS*

Property and casualty insurance is an ever-changing but eminently stable business. Because it touches every social, cultural, commercial, and industrial facet of our modern living, it offers challenge and opportunity to many talents. Whether your forte is technical administration or dealing with people, you'll be at home with The Home—and you'll enjoy professional standing in work of real significance.

Consult your Placement Director or write for details about our Training Program now in progress in key cities coast-to-coast. If you're an undergraduate, ask about our Summer Training Program and opportunities offered to get acquainted with the interesting fundamentals of our business. Address your inquiry to John H. Washburn, Assistant Vice President.

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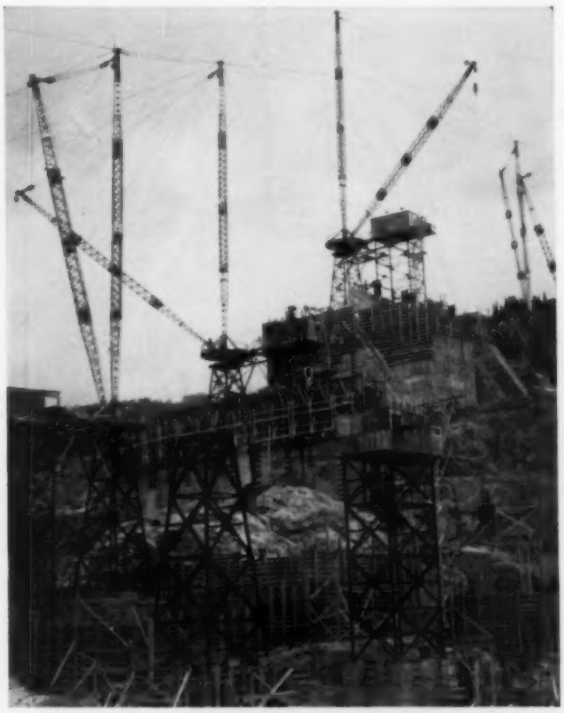
Art Fox, B.C.E., Manhattan College '47, reaches 77,000 engineers and construction men as a Senior Editor of McGraw-Hill's ENGINEERING NEWS-RECORD

An Editor with a Hard Hat. Art, pictured above at right with Assistant Resident Engineer McCormack, observes progress at the Beaumont Rapids power dam at St. Maurice River, Quebec.

In ten short years, Art has climbed rapidly in his profession. Just back from a 2,500-mile editorial trip to Canada, here's what he has to say:

"To me, journalism is a form of teaching. Backed by the world-wide resources of McGraw-Hill, through travel, by working with leading engineers, I report on what's new and significant in engineering and construction. I try to make my articles more than instructive—to inspire readers to tackle and solve projects they might otherwise shy away from."

Other than preparing reports in college, Art had no early writing experience. Immediately after graduation, he was employed by a leading firm of consulting engineers. While on the job his appreciation for the inspiration-power of the industrial magazine



Cranes and Concrete. Another view of the Beaumont Rapids project. Art drove 1,800 miles from Montreal to get three on-site stories. Like other McGraw-Hill editors he got his story *firsthand.*

an "Engineer-Journalist"

grew, and in less than a year he applied for a position with McGraw-Hill.

Art started with ENGINEERING NEWS-RECORD in 1948 as an Assistant Editor. Since then, Art has been "up to his neck in engineering" . . . earned his P. E. license while an engineer-journalist . . . been active in A.S.C.E. and other professional organizations.

If you want a fast-moving career in engineering journalism: prestige, variety, a view of the "big picture" in your industry, and more—*we're looking for you!* You *do not* need previous writing experience, but you *do* need: ambition, an alert, inquiring mind and a desire to write.

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Assistant to the Editorial Director
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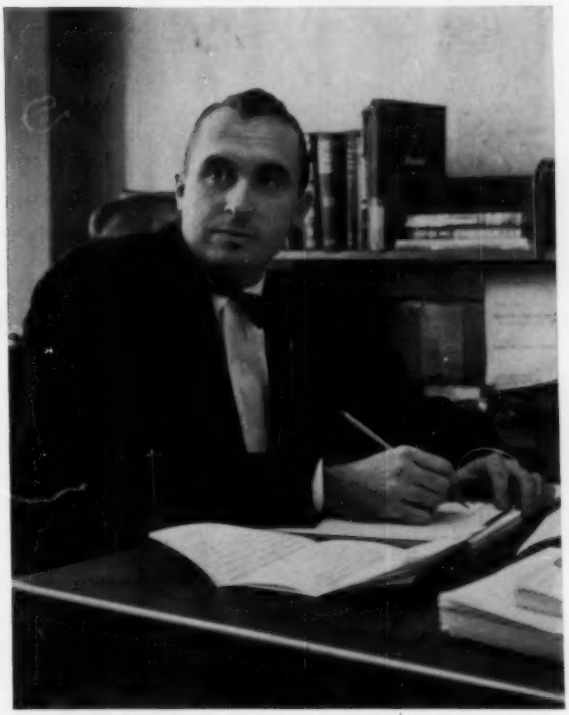
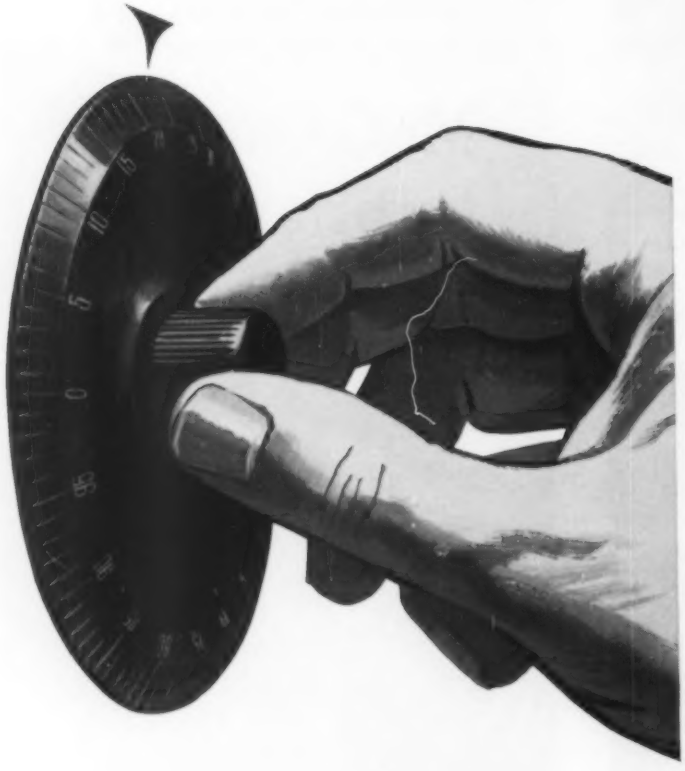
Dams and Tunnels. Here's a shot Art took of work on the Bersimis Powerhouse. As a McGraw-Hill engineer-journalist, you, too, will expand your professional background while reporting to your industry.



Desks and Plans. Here's Art at his desk in the McGraw-Hill Building. You, like Art, will travel, participate in professional societies and advance yourself financially and educationally—as well as serving your industry and profession.

A good combination is hard to beat



So is the future of the man who charts his course wisely. That is why he should choose a company that offers him the combination of opportunities so necessary to his professional growth. At Bendix the young engineer will find such a combination—a tradition of achievement and continued growth spanning more than three decades, a forward-thinking management team that is truly "engineering minded", unexcelled facilities, a diversity of products serving every basic industry. Engineering is a key factor in the company's operations. Bendix has a continuous need for the best engineering talent available.

Bendix has long adhered to a policy of advancement from within. Of the nine new divisions added during the past seven years, all have been staffed from within. With a diversity of products and engineering opportunities at hand, the talented engineering graduate may assure his future at one of twenty-four Bendix divisions located throughout the country, working in the field of his choice.

Bendix has need of men of talent in such fields as Electronics, Electromechanics, Ultrasonics, Systems, Computers, Automation and Controls, Radar, Nucleonics, Combustion, Air Navigation, Hydraulics, Instrumentation, Propulsion, Metallurgy, Communications, Carburetion, Solid-State Physics, Aerophysics and Structures.

Any interested student should be urged to write to Dr. Gerald A. Rosselot, Director of University and Scientific Relations, Bendix Aviation Corporation, 1107 Fisher Building, Detroit 2, Michigan.

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COMMENTS FROM THE 50-YD. LINE

A "Monday morning quarterback" looks back at the game of recruiting and finds a few holes in the line as well as in the coach's head.

By Cornelia Ladwig

Director of Placement, West Virginia University

A PLACEMENT officer commenting on recruiting techniques is placed in much the same category as the Monday morning quarterback, for it is much easier to theorize from the sidelines what could have been done than it is to play the game against obstacles, many of which are not visible from the grandstand. However, the observer can sometimes see things which the participant misses, and, although part of what he sees may be irrelevant, or irrational, he may be able to give some clues which can later be translated into touchdowns.

Utilization of engineers implies hiring at regular intervals new talent to replace that lost by normal attrition and to provide for staff expansion. While what follows may seem to be more applicable to the recruitment of inexperienced engineers, the same problems may be equally important in the treatment of experienced personnel.

Companies faced with a dearth of executive material in recent years are reluctant to permit such a situation to recur. Little expansion and little hiring during the depression years resulted in a low supply of available, trained, and capable people to assume top responsibilities in this period of great growth and expansion. "Every man can be president" seems to be the theme song of today's recruiting. The good, plodding, well-adjusted, average guy is often overlooked in the mad scramble for future executive talent. If this trend continues, organizational structure could become so top-heavy as to collapse under its own weight. Language experts can do just so much in creating ego-satisfying, high-flown titles to assign to surplus manpower in the upper ranks.

If the company conceives of itself as an entity, whether it be housed under one roof making a single product, or scattered throughout the world involved in a diverse enterprise, unified screening and hiring processes would naturally follow. Even at a time when unsolicited applications were in abundance, some companies realized that their sights were narrowed dangerously if selections were made from these applicants only; there being no way of knowing whether they were hiring only the best of what they saw, or the best of what could be obtained. New sources of talent were then developed through widespread recruiting programs.

An applicant speaking to a company man feels that this man represents the entire organization. It is unlikely that a plant interviewer will be sufficiently aware of requirements throughout the system to be able to inform, assess, or refer an applicant unsuitable for his particular plant. It is possible that a rejected applicant will give no further consideration to any other plant in that organization. Plant recruiting, which is further complicated in this day of the "urge to merge," seems essentially selfish and narrow.

Claims that transfers are made throughout the entire organization as employees develop new interests and abilities are likely to be suspect when plant jealousies prevent coordinated recruiting. In order to increase the scope of hiring, to make sure that available talent is placed where it is most adaptable, and to be truly economical, we wonder whether the initial stages of hiring shouldn't be done on a company-wide basis.

We sideline observers are often baffled at the speed with which the coach shifts his team. We can't understand why that quarterback isn't allowed to stay in there long enough to learn what is going on so that he can run a few plays on his own. The following information about the personnel department was taken from a company brochure: "A schooling in this key department is a must before you can move on, and up, to one of the plush jobs."

While there is no quarrel with those companies who wish to provide experience in diversified departments for candidates for higher positions, there is, however, the possibility that this experience as

head of the personnel department may be costly. Under such a plan, the department changes hands every few years. Not only is the time too short for any to become conversant with more than the generalities of the hiring process, but also the mental attitude of these men, who are being whisked along, is more likely to be one of learning what has been done rather then developing long-range plans.

We work with other companies where it would seem that the personnel department is sidelined and relegated to water-boy or record-keeping chores. There appears to be no concern with information services nor applicant analysis. To those of us who are attending all the games, the scores would indicate that those companies in the lead have made it possible for the personnel department to keep up to date on company-wide personnel needs, to disperse this information, and, in turn, to locate properly qualified candidates. Our guess is that in these cases, enough authority must have been delegated, not only to maintain the services of competent individuals in key positions, but also to develop the respect of all segments of the organization so that each level of management concerned can perform that phase of hiring which is its responsibility.

Automation has wrought many changes in modern industrial operations; however, no push-button hiring techniques have as yet been developed. Those persons charged with the responsibility of hiring are still relying upon human abilities in discharging this responsibility, from initial screening to the final hiring. Whether this is done on the college campus, in the city hotel or branch office, on a street corner, or in a plant, the interviewer must have special abilities, both to analyze the applicant's training and personal qualifications, and to initiate information and answer questions about his organization and its jobs. Since the future welfare of the company is so dependent on the talent recruited each year, it would seem that screening and hiring should be in the hands of extremely competent and well-trained individuals.

It is not the formal college discipline which makes a man a good interviewer, but the sum of all his training and personal attributes. From where we sit, it appears that many organizations are sadly misusing their engineering manpower. An engineer, who has been called upon to leave his shop and go forth into the world on a temporary excursion to lure engineers into the fold, may be effective enough in analyzing the education and experience of applicants for positions in his own area, but totally lacking in information as to needs elsewhere.

We on the college campuses notice that the best results are obtained by companies whose recruiters are enthusiastic, intelligent, imaginative, and decisive; are skilled in interviewing techniques; do not resort to trick or to wholly technical questions; are well acquainted with jobs and personality structure throughout the company—in short, career personnel people.

There are many practices, perhaps trivial, but unbecoming, followed by companies and their representatives which have cost them good future employees as well as good public relations. It is possible that they are unaware of the implications of these practices. For example, many an applicant has been queried during an interview about the salary offers he has had, and even what companies are involved. Interviewers have also been known to degrade other companies.

Testing, in itself, cannot be termed an unbecoming practice; however, poorly constructed tests administered improperly can result in the loss of excellent employees. Purely for the sake of following the trend and giving tests, many companies must have fallen prey to the fast-talking test salesman who purported to have just the right formula for personnel selection, or could create one, tailored to size, given a few days. Other companies, with a do-it-yourself attitude, have constructed their own instruments which often seem to have just about as much usefulness for deciding on future employees as the crossword puzzle in your daily newspaper. Although every user of tests solemnly declares that their results form only a part of the final decision, it is so easy to overweigh the im-

(*Continued on page 114*)

COMING PLACEMENT MEETINGS

Western College Placement Association: January 23-24, 1958, Multnomah Hotel, Portland, Oregon.

University Counseling and Placement Association (Canada): June 12-14, 1958, University of Alberta, Edmonton, Alberta.

Midwest College Placement Association: September 8-10, 1958, French Lick Springs, French Lick, Indiana.

Rocky Mountain Association of College Placement Officers: October 2-3, 1958, Omaha, Nebraska. (1959 meeting–October 1-2, Albuquerque, New Mexico.)

Eastern College Personnel Officers: October 5-8, 1958, Wentworth by the Sea, Wentworth, New Hampshire. (1959 meeting–October 11-14, Swampscott, Massachusetts.)

Southwest Placement Association: October 15-17, 1958, The Galvez Hotel, Galveston, Texas.

Middle Atlantic Placement Officers Association: October 21-23, 1958, Pocono Manor Inn, Pocono Manor, Pennsylvania.

Southern College Placement Officers Association: October 29-31, 1958, Hollywood Beach Hotel, Hollywood Beach, Florida. (1959 meeting–tentatively October 7-9, The Hermitage Hotel, Nashville, Tennessee.)

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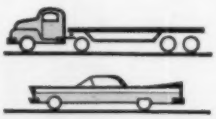

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SAN DIEGO STATE SALARY SURVEY

Polling 181 firms and agencies, Will Kidwell has revealed some interesting statistics — largely sectional but reflecting responses from all Pacific Coast states and some national organizations.

■ A survey of employers of college graduates has been prompted by the need of both employers and placement officers of the Pacific Coast to be informed concerning the current demands and salaries for inexperienced college graduates. Accordingly, such a survey was conducted by Will M. Kidwell, Placement Officer of San Diego State.

There were 181 firms and agencies who responded and information contained in the report reflects the demands principally in Southern California. There were reports, however, from all of the Pacific Coast states as well as 17 who reported their needs from a national standpoint.

Some three-fourths of the firms in the survey were classified as government, sales, insurance, aircraft and manufacturing, banking, and finance.

The survey indicated that this year the demand for inexperienced college graduates will be down about one-fourth (28.8%). When compared with the number hired during the 1956-57 season, the demand for men was off 30.3% and women 15.2%. In several areas of business, the demand was up: e.g. accountants (53.1%), insurance (81.8%). In general, the demand for college graduates in manufacturing, including aircraft, was down: e.g. mathematicians and physicists were down 62.4% and 58.4% respectively. The demand for engineers was down 34.3%.

The positive side of engineering demand was reflected in an increase of requests for civil engineers (45.1%), sales engineers (23.5%) and others (17.8%). The demand for aeronautical engineers was down 89.9%, mechanical engineers down 27.7%, and electrical engineers 65.8%, when compared to the number actually hired during the

HIRED AVERAGE MONTHLY SALARY (1956–57) and ESTIMATED OFFER AVERAGE MONTHLY SALARY (1957-58)

Field of Work	*Av. offer last year Bach.*	*Est. Av. offer this year Bach.*	*Av. offer last year Mas.*	*Est. Av. offer this year Mas.*
Accounting	$359	$363 (? -416)	$405	$401 (396-430)
Advertising	410	410 (350-450)	420	420 (———)
Business Trainee	372	365 (? -412)	414	399 (386-466)
Chemistry	425	430 (420-481)	467	468 (? -556)
Economics	408	404 (387-458)	472	423 (375-430)
Engineering	439	444 (? -529)	478	495 (? -599)
Finance	363	340 (? -411)	435	431 (404-453)
Insurance	371	393 (370-435)	438	438 (425-500)
Journalism	348	354 (———)	433	750 (———)
Liberal Arts	350	380 (372-427)	383	392 (? -430)
Mathematics	427	429 (431-507)	483	499 (493-577)
Merchandising-Whl.	400	370 (325-375)	375	375 (? -400)
Merchandising-Retail	299	306 (? -375)	375	375 (———)
Office Management	320	289 (? -378)	388	383 (375-430)
Personnel	334	360 (? -416)	359	342 (? -418)
Physics	454	477 (464-582)	495	537 (493-598)
Sales	359	353 (? -414)	431	438 (398- ?)
Secretary	241	269 (? -363)	375	375 (? -425)
Social Service, et al	350	342 (318-398)	368	390 (354-471)
Statistics	363	368 (? -450)	—	— (———)
OVER-ALL AV.	$370	$372	$421	$438

1956-57 college year. It should be borne in mind that the demand for engineers is still strong but lessening; the firms sampled in the survey reported a need for 2,756 engineers.

Salary offers for inexperienced college graduates with bachelor degrees this year, the survey indicates, will average $372 a month as compared with an average of $370 actually used in hiring last year. The range of the average offers to those with bachelor degrees will be $269 for secretaries to $477 a month for physicists. Engineers run second with an average monthly offer of $443. Some concerns indicated they may offer as high as $582 for a physicist with a bachelor degree.

Those with a master's degree will be offered, on the average, $438 a month this year as compared with the average hiring rate of $421 last year. The range of average offers will be $342 for a personnel worker with a master's degree to $536 for a physicist. Engineers average second with a monthly offer of $495 a month and mathematicians are close behind with $493 a month. Some concerns indicated they may offer as high as $598 for a physicist with a master's degree; one company said they might offer as high as $750 for a journalist with a master's degree.

Last season during the interviews, the recruiters noted the following predominant failings of students (in descending order):

Indecision
Emphasis on salary rather than a career
Lack of self-knowledge
Inarticulateness
Lack of specific related training
Failure to study company brochures before the interview
Reluctance to start at the bottom
Lack of aggressiveness and initiative.

In contrast, the most favorable impressions during the interviews were (in descending order):

Poise and maturity
Good grooming
Interest in type of work to be performed
Enthusiasm
Willingness to work for advancements
General knowledge
Correct speech
Good manners
Thorough study of opportunities offered
Interest in non-monetary aspects of the job.

The survey summarized the typical steps followed in the selection of a college student as an employee as follows:

1. Contact Placement: State needs; secure interview dates
2. Confirm dates, describe jobs, send company brochures
3. Place advertisement or announcement in campus newspaper
4. Conduct campus interviews and meet professors
5. Secure potential employee's application
6. Contact references
7. Have student visit firm and take aptitude tests
8. Write letter of offer
9. Conduct physical examination of applicant
10. Hire applicant.

Some factors which the recruiters believed handicapped them most in their college recruiting were (in descending order):

Graduates undecided as to their vocation
Company not well known on the campus
Not enough time, staff, or budget for college recruiting
Company's starting rate too low
Professors need to understand our type of business
Graduates lack interest in our business
Inadequate company literature for college recruiting
Number of college graduates too small.

The survey was conducted during the latter part of the summer of 1957 and all reports from concerns were completed before September 1, 1957.

FIRST NATIONAL PLACEMENT WORKSHOP IS ANNOUNCED

Plans for the first College and University Placement Workshop, the first to be held in the United States, have been announced by co-directors Dr. Frank S. Endicott, Northwestern University, and Dr. Eugene W. Dils, Stanford University.

The two-week Workshop—August 5 through August 16, 1958—will be held on the campus of Northwestern University at Evanston, Illinois.

The areas to be considered during the course will include a review of the growth and development of college placement services; current theory, practices, and the best operational procedures in placement; analysis of the job of placement personnel from the standpoint of counseling; intra-school relationships and status; and the establishment and maintenance of good public relations.

Workshop members will have on-campus housing at Northwestern University. Several campus cafeterias will be available to the group.

Admission to the initial course will be limited. Only those engaged in placement in four-year colleges and universities will be eligible to attend. Additional information about the Workshop will be sent to the placement officers listed in the October issue of the JOURNAL OF COLLEGE PLACEMENT.

It is intended that this pioneering conference will be a stimulating experience for the participants, wherein questions and problems will by thoroughly discussed. In addition to the co-directors, the staff will include resource persons who are especially qualified in particular phases of placement work. It is hoped that the Workshop will assist in the wider recognition of placement as a distinct professional field.

EMPLOYMENT (1956-57) AND DEMAND (1957-58)
INEXPERIENCED COLLEGE GRADUATES

Field of Work	*Hired Last 12 Months*		*Hire Next 12 Months*		*% of Incr. or Decr.*	*% of Incr. or Decr.*	*Over-all 1957-58*	
	Bach.	*Mas.*	*Bach.*	*Mas.*	*Bach.*	*Mas.*	*No.*	*Pct.*
Accounting	344	21	546	12	+58.7	—42.9	558	+53.1
Advertising	13	0	12	0	—7.7	0.0	12	—7.7
Business Trainee	500	39	457	34	—8.6	—12.8	491	—8.9
Chemistry	125	24	87	23	—30.4	—4.1	100	—26.1
Economics	70	11	63	0	—10.0	—100.0	63	—22.2
Engineering	3923	274	2557	199	—34.8	—27.4	2756	—34.3
Aeronautical	(495)	(126)	(56)	(7)	(—88.7)	(—94.4)	(63)	(—89.4)
Civil	(625)	(5)	(903)	(11)	(+44.5)	(+120.0)	(914)	(+45.1)
Electrical	(1583)	(48)	(517)	(40)	(—67.5)	(—16.6)	(557)	(—65.8)
Mechanical	(684)	(34)	(478)	(41)	(—30.1)	(+20.6)	(519)	(—27.7)
Other	(536)	(61)	(603)	(100)	(+10.6)	(+63.9)	(703)	(+17.8)
Finance	82	10	84	7	+2.4	—30.0	91	—1.1
Industrial Management	42	...	....	...	.....	.....	....	.....
Insurance	10	1	18	0	+80.0	—100.0	18	+81.8
Journalism	14	2	2	8	—85.8	+300.0	10	—37.5
Legal	13	18	1	15	—66.7	—16.7	16	—23.8
Liberal Arts	573	15	455	27	—20.6	+80.0	482	—18.0
Marketing Research	6	1	5	0	—16.7	—100.0	5	—28.6
Mathematics	997	243	395	71	—60.4	—70.8	466	—62.5
Merchandising-Wholesale	76	5	15	0	—80.3	—100.0	15	—81.5
Merchandising-Retail	4	0	74	0	+1750.0	0.0	74	+1750.0
Office Management	25	0	2	0	—92.0	0.0	2	—92.0
Personnel	39	3	25	5	—35.9	+66.7	30	—28.6
Physics	253	28	107	10	—58.4	—64.3	117	—58.4
Recreation	18	35	....	...	.....	.....	....	.....
Sales	1001	62	966	60	—3.5	—3.2	1026	—3.5
Sales Engineering	17	0	18	3	+5.9	+100.0	21	+23.5
Secretary	50	1	29	1	—42.0	0.0	30	—41.2
Social Service, et al.	128	9	76	14	—40.6	+55.5	90	—34.3
Statistics	2	0	8	0	+300.0	0.0	8	+300.0
OVER-ALL	8314	802	6002	489	—27.8	—34.0	6491	—28.8

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REGIONAL ASSOCIATIONS

A record number of MCPA members attended the 1957 meeting held at the Hotel Statler in Detroit on September 8, 9, 10, and 11. A total of 466 persons — 390 from industry and 76 from colleges— participated in the convention program. This compares with 502 participants in the 1956 Cleveland proceedings. However, 162 of those attending last year's meeting were guests.

Months of pre-planning by the Detroit convention committee headed by Don Hunt (University of Detroit) and Preston Amerman (Detroit Edison) contributed to a smoothly organized and professionally stimulating program.

As a feature of the convention, the banquet sessions dealt with non-placement matters. Father C. J. Steiner, President of the University of Detroit, spoke on the use of television in higher education; Dr. Henry David, Executive Director of the National Manpower Council, spoke on the significance of our growing population; and a design team from General Motors talked and showed a film on the role of the designer in industry.

As President of the University of Detroit for the past eight years, Father Steiner said he was well-acquainted with the problems facing higher education caused by growing enrollments. Speaking at the Monday noon luncheon, Father Steiner felt that what happened to higher education was of special concern to the MCPA membership, composed of those who market the college product and those who use the product of our colleges.

"We have become a society of students," said Father Steiner, "with one-fourth of our population enrolled in some form of education. A total of 40,000,000 Americans are students in (1) the traditional system of schools and colleges, (2) military education programs, (3) training programs in business and industry, or (4) adult education."

In the next ten years, the number of students enrolled in higher education will double. Father Steiner feels that colleges and universities must experiment with new techniques to handle the growing number of students. For a number of reasons, Father Steiner feels that television will become important in the future process of higher education. Television will permit the influence of great teachers to affect thousands of students each year. Persons taking adult education courses will not have wasted hours of travel time as they will listen to their classes right in their own home. According to Father Steiner, research studies show that those who have been taught by television are equal in knowledge with students trained by traditional methods.

Father Steiner envisions a second television set in every home. This set would be reserved for educational and cultural television. In case the cost of a television set is a problem, Father Steiner suggested this purchase could be made using money saved from traditional tuition fees.

"It is no news that higher education is under stress," said Dr.

Largest Meeting —

Setting a new record for participants, the MCPA meeting held in Detroit in September drew a total of 466 persons for the four-day affair, making quite a panoramic picture of a banquet session. The new high of active registrants included 390 from industry and 76 from the colleges of the area.

The MAPOA meeting, held at the Pocono Manor Inn in September, featured talks and panel discussions. At right is a portion of the crowd at luncheon; below are the old and new boards.

Henry David. "The important thing is that the attempts to solve the problems of higher education will in themselves bring major gains." Among the gains already realized in the attempt to solve the problems of higher education are these:

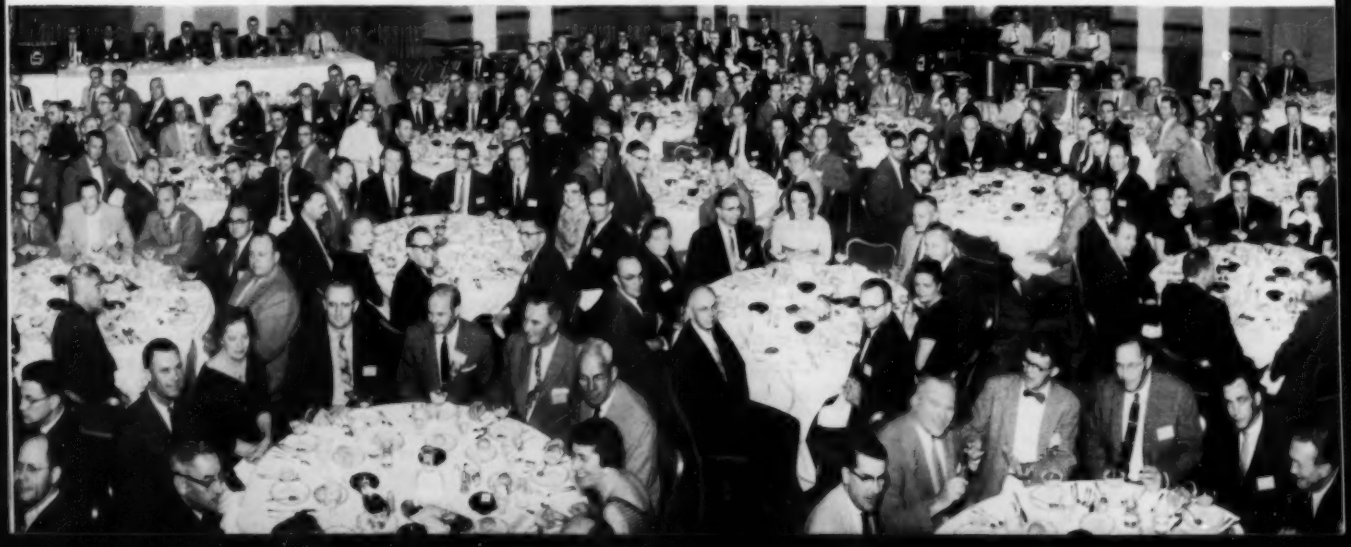
1. Educators are now not just talking to themselves.
2. It is recognized that none of these problems are new ones.
3. A lot of highly-profitable self-analysis is taking place in higher education.

In his talk to the Monday evening banquet, Dr. David said that, "All of our problems are manpower problems in one way or another." The mismanagement of manpower is responsible for some of our critical shortages of personnel. For example, too many engineers are not doing engineering work. Dr. David also reported that too many trained teachers are doing administrative work rather than remaining in the classroom.

Looking ahead to 1965, the Executive Director of the National Manpower Council and Professor of Economics at Columbia University pointed out some of the probable changes in our labor force as a result of our increasing birth rate. In 1965, there will be a disproportionately large number (40 per cent) of our population in the 5 to 24 year age bracket. At the same time, there will be an unusually low percentage (44) of our population between 25 and 65. Of the remaining population, ten per cent will be over 65 and six per cent under five years of age.

The automobile industry cooperated in presenting a Tuesday evening program on the importance of design in our economy. Two young General Motors designers, George Pollard and Suzanne Vanderbilt, were introduced by Tom Beaver (Ford) in a program arranged by the Chrysler Corporation!

Speaking first, Mr. Pollard said that modern design techniques should be credited to theories of design and training techniques developed in Austria after World War I. The designer in America is encouraged to use many media (metal, wood, ceramics, and tex-



The new officers of the MCPA, at left and from left: Chester E. Peters, Kansas State College, treasurer; David Robinson of Baldwin-Wallace, president; Frank S. Endicott, Northwestern University, past president and a member of the executive committee; Jack Breslin, Michigan State University, vice president; Larry Hillyard, Iowa State College, and V.A. Buescher, members of the executive committee. Below, past president Endicott turns the gavel over to new president Robinson. Absent when the pictures were made was Loretta Jones, Loyola University of Chicago, new secretary of the Association.

tiles) and a wide range of colors. His chief restrictions are imposed by engineering or production personnel and by cost analysts.

Mr. Pollard stressed the opportunities in industrial design for young people. The young designer has an excellent chance for independent work as he achieves confidence in his own abilities and professional recognition for past achievements. To demonstrate his points, Mr. Pollard showed the film "The Look of Things."

"The woman casts the deciding vote in seven out of ten automobile purchases," said Suzanne Vanderbilt. The husband usually decides the type and make of automobile, letting the wife select the particular car which the family will purchase. Miss Vanderbilt said that slidability of seats, the styling, color, and the ease of cleaning fabrics are all important in selling the female purchaser. One of the main reasons why General Motors has eleven women designers is to cater to this female market. Miss Vanderbilt cautioned that the female designer is not in business to add lace doilies to seats or chandeliers to the dome light.

Middle Atlantic Conference

■ The entire conference gathered for the welcoming speech by John Kirkwood, MAPOA President, which was followed by the Keynote Address given by Dean Elmer C. Easton, College of Engineering, Rutgers University, entitled "A Partnership in Engineering Education."

The Past President's Panel, moderated by John Kirkwood, discussed "What MAPOA As An Association Should Be Doing."

Everett A. Teal, Director of Placement, Lehigh University, emphasized that MAPOA could be of much assistance to both the college placement officer and the recruiter in counseling functions by studying such topics as the relationship of extracurricular activities to future leadership, the evaluation of grades in relation to jobs, and the evaluation of motivational goals.

Mrs. Geraldine Wyatt, Director of Placement, University of Delaware, referred to the MAPOA "Placement Aims," one of which is "To provide an opportunity and a continuing service for the student to gain information and experience pertaining to vocational objectives; to provide a broad knowledge of the types of jobs available; to provide experience in interviewing and in the writing of letters of application and acceptance, as a part of the student's over-all general education."

She also cited Article IV of "The Principles and Practices of College Recruiting" which is, "As part of its general obligation for the development of the student, the college should accept responsibility for stimulation of his thinking about his career objectives and for assistance in overcoming handicaps which may hinder his progress towards objectives appropriate for him. Competent counseling services should be provided for this purpose, avail-

(*Continued on page 104*)

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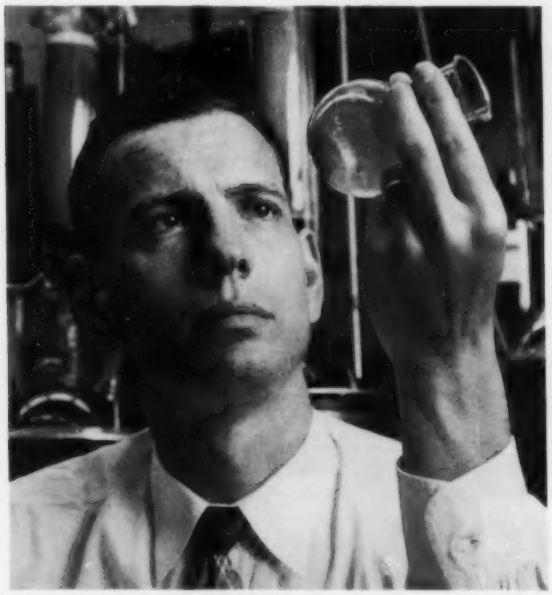

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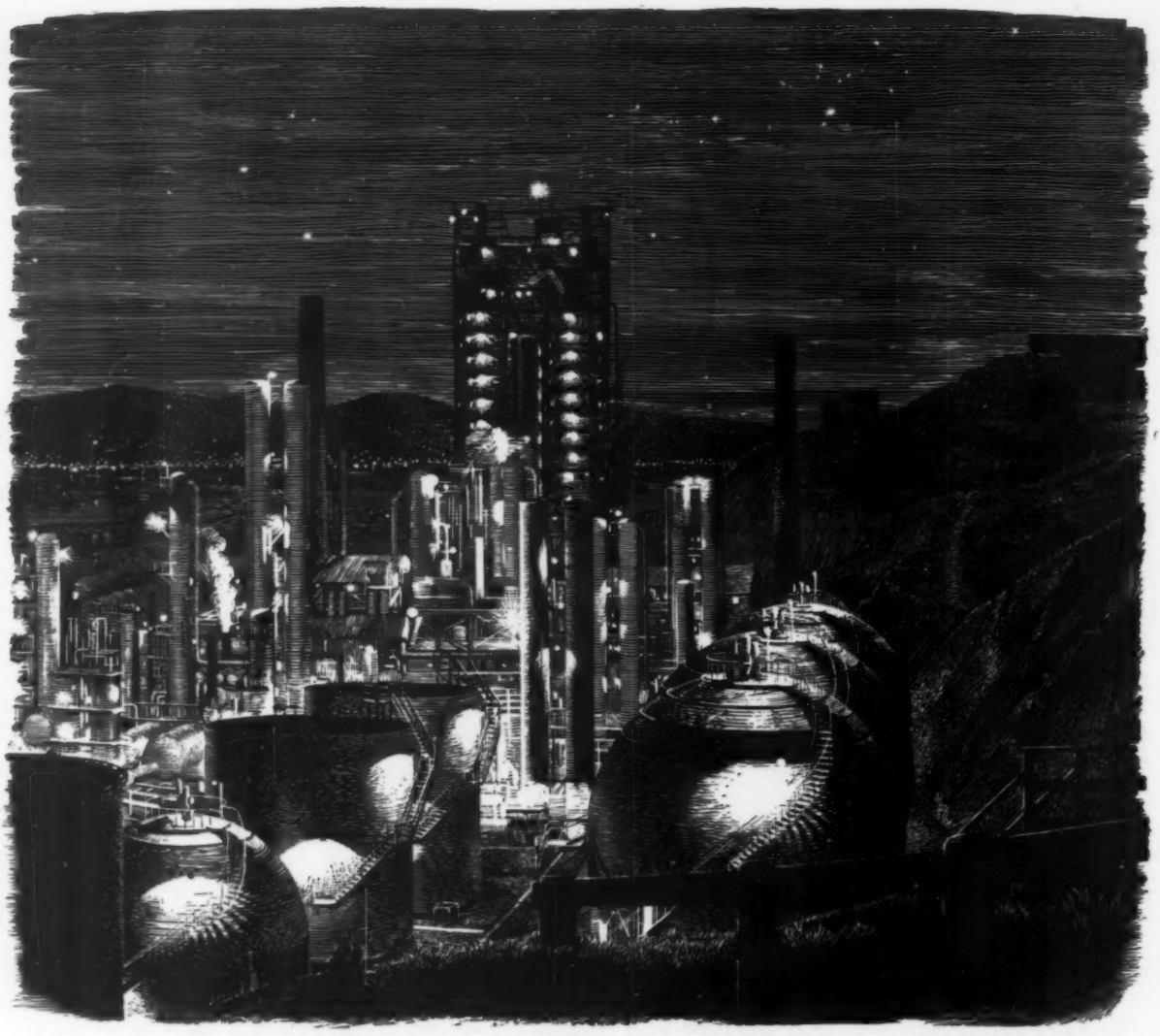

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The Climate for Placement

Without a well-established job description and a clear understanding with the university's administration, a placement director is treading a dubious course. Here are the necessities for effective operation as a recruiter sees them.

By W. Scott Hill

Manager of Engineering Recruiting, General Electric Company

MANY of us in industry find that we can perform our work with more certainty and confidence if we clearly understand how our particular job fits in with those around us. In many instances it seems to me that the job of the placement officer is not as clearly defined as most of them would like, and perhaps some of the uncertainties which often arise in this relations matter are due to a lack of a clean-cut job description.

If the placement officer is fortunate in having a clear understanding with his administration as to how his work is integrated with that of the faculty, the admissions and public relations offices, and what his obligations are to the students, then he can proceed with confidence. On the other hand, if some or all of these understandings are left to chance, then he can well be on shaky ground. In this case, he will probably adopt some makeshift philosophy of operation for the basic work of his office, and may or may not realize the full potential of his own abilities, or realize all that the college wants. I suggest that each individual in placement take time out to set down on paper the broad purpose of his job, his principal responsibilities, the relationships he has—both external and internal—in the college and with the outsiders, and the authority given him. Finally, I suggest listing what we call the measures of accountability; that is, on what results does a supervisor evaluate how well one is doing. Wouldn't this make a good document to discuss with the administration?

On the minimum side, he might conceive of his job as simply that of a traffic director in which the scheduling and controlling of the interview space is his prime objective. This could lead to concern with statistics; namely, how many different employers can be accommodated, what is the biggest salary offer which will be made to any given student, and similar rather narrow concepts of the potential of the job. A much more wholesome concept is that of a strong feeling of responsibility for seeing that the students are fitted into the best job possible compatible with their abilities and potential. Still a better concept is to incorporate the first two, and also become an interpreter of the needs of the employer to one's administration and faculty and, in turn, of the college to the employer.

Compares College and Industry

Let's stop for a moment to consider the similarity between the relations job which industrial companies have and that of the placement officer. We in industry have three basic responsibilities. We must continue to satisfy our customers or we won't have any business. Our shareholders must have a return for their investment in our facilities and our business in the form of a profit, or growth is endangered. Lastly, we have our responsibility to our employees in the form of pay and working conditions, or we will not attract competent, high-calibre people to carry on our affairs. These relationships are important whether we are in a large company with widespread popular public ownership or in a small, closely held and personally controlled company. Our reputation depends on opinions which all of these groups hold of us and, therefore, our relationships with each group have to be critically watched.

In the same way, each college has a responsibility to its students and their parents who are spending their time or money in order that they can profit from the educational program. They are, in a sense, the shareowners, albeit temporarily. Each college has a responsibility to the members of the faculty, who are the employees. Lastly, each also has customers, namely industry and Government and education, who will employ the students as they finish their academic training.

I am aware that many colleges and universities have an active public relations office. Their work is often pointed in quite a different direction from many of the relations which exist between industry and school through such things as professional societies, research contracts, summer employment of professors, special scholarship and fellowship grants, special assistance in building or maintaining laboratories, or the placing of students with employers.

This brings us to the public relations aspect of the placement office even though the placement director has not consciously sought it. In a great many cases, the placement office is one of the principal connections between education and the employer. The placement officer then becomes a front for the college, just as the employer's representative, in a sense, characterizes the

whole company he represents when he is on campus and talking with students.

Because of this unique position, the placement officer has an indirect, but very positive, influence on many things which might not appear in his initial position guide. The people in placement become the interpreters of many of the attitudes and industry reactions which the employer has to education. I am not sure that this coupling between employer and administration is fully utilized. It is a channel which develops through the interests and the direct organizational tie with administration.

Industry is making a substantial investment in its relations, not only with the public, but with the colleges. Each person in placement has a choice of whether he, in turn, conceives of his relations with these employers as simply an expedient of the moment, or, rather, as developing confidence and mutual understanding, between the supplier and the user of the academic product, which could be utilized as a guide to long-range college programs.

Needs Have Not Been Static

Whatever else we may say about the general manpower needs over the past few years, we would certainly not call it a static condition. As we look ahead, we must expect a continually changing situation and we must make our plans so the change is not upsetting to us. I would like to refer to some of these changes as transients, whether they apply to the total manpower placement problem or to the local fluctuations which may affect specific disciplines. These transients are relatively short-term effects, but they sometimes obscure the long-term trends.

The long-term trend, as applied to future manpower needs, is part and parcel of the future of the country. No matter whether we are planning a business or the development of a university or a public school system, the first thing we have to decide is how much confidence we have in the long-range future of, first, our country, and then, our part in it. The employer will answer this by pointing to the commitments he makes, year after year, of capital and resources, in the expectation that the long-term growth will continue. From the standpoint of the placing of people, he will tell you that these resources can only be used effectively by having trained minds to put them to work; money and materials and production equipment, themselves, will not carry on without people.

Where do the trained minds come from? Basically, the most reliable source of this potential brainpower over the years has been the graduates of colleges and universities. A substantial number of these have moved off the campuses by way of placement offices in recent years. Many placement officers have conceived of their relations job only in terms of the hectic years in which we have been operating. There is a tendency to plan toward building the placement job in terms of more people and bigger facilities because of the growing student population. Isn't it good, long-range planning to re-think what the relations job would be if the supply-demand picture were to come into better balance? At the moment our economy is experiencing a shortage of money with which to carry out capital expansions and, at the same time, Government spending is being curtailed in some defense areas. This combination can conceivably cause one of those shifts in demand of people or change the emphasis on kinds or quality of people of which I have just spoken.

If this should happen, what will be its effect on placement efforts? A little study of this could serve the useful purpose of determining what the essentials of the placement job are, in contrast to some of the temporary demands which plague the position now. Will the effort change from scheduling and placating frantic employers to one of trying to place the lower, and less salable, part of the class? Will it throw the emphasis back on quality of performance in college, quality of selection of entering classes? Will it change the placement job to one of counseling with and pleading for the placement of the bottom of the class, on the theory that the top of the class can take care of itself? Or can we face up to the long-range need of the country; namely, that top-quality, leadership-type people are scarce? If so, perhaps placement's most important contribution will be to help locate these people where, through exercising their leadership on a wide base, their qualifications and positions would have the leverage to help the many with less ability.

Hiring Is Basic Function

The reason the employer is on campus and talking with seniors is, of course, for his basic objective of hiring some of the students. Unless his efforts and his relations problems, about which we are speaking, result in moving students from the campus to his payroll, the whole process is futile. This leads us to ask a few basic questions of the employer himself.

Industry can take the short-range attitude that it has work to be done and colleges have graduates with the initial training to immediately undertake this work. Or, industry can think in terms of growth and potential for these graduates, since these are the individuals who, through development, will eventually take over and run the company. I think it was Mr. Hoover who was talking to a group of students and said, in effect, that they were not competing with his generation, but that they would inevitably inherit the jobs and there was nothing which could possibly change that trend. When we are on the campuses, we are therefore picking those who will succeed us in whatever kind of work we are doing. How, then, can we keep this relationship between the employer and the student on the highest level?

Many times we have evidence that the talk which the student has had with some employer or some placement officer was a turning

(*Continued on page 98*)

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SALES SUPPORTING DIVISIONS

• *Operations* • *Control* • *Publicity* • *Personnel*

Merchandising Division: Our stores' selling departments are actually separate individual businesses. Many are managed by men and women who left the campus a few years ago. These young people are trained to assume authority and responsibility for all a department's functions: planning, buying, presentation, selling, personnel leadership, advertising and profit-making.

You will find in selling departments graduates with almost any kind of a degree. They all have in common an enthusiasm for the unique challenge of retailing: how to buy the right merchandise in the right amounts at the right time, so that it will sell readily and produce a fair profit.

This Federated-acquired knowledge and experience will help them move up rapidly and profitably to a place among our store executives.

Sales Supporting Divisions:

• *Operations* — Flow of merchandise, maintenance, supplies, customer services, expense control.

• *Control*—Accounting, auditing, customer credit.

• *Publicity*—Advertising, display, public relations, special events, fashion co-ordination.

• *Personnel*—Employee selection, training, placement, advancement and welfare.

The ambitious trainee can advance quickly to managing and supervisory responsibility in each of these divisions.

If you are looking for a bright, vigorous future, you'll find it with Federated. We are an expanding company of 41 stores and branches with a strong pattern of growth and leadership. This growth constantly creates new opportunities and often brings about a "chain reaction" of promotions.

Hundreds of our young executives are earning well over *twice* their starting salaries at the end of a few years. And the starting salaries are within the range of those offered by manufacturing industries with far less opportunity for quick promotion.

We look forward to having you discuss with us the advantages of an exciting and profitable career in Federated!

FEDERATED DEPARTMENT STORES, INC.
Cincinnati 2, Ohio

(If you'd like to know more about us, drop a note to the Executive Placement Director at any of the stores listed below.)

ABRAHAM & STRAUS Brooklyn 1, N. Y.	FILENE'S Boston 1, Mass.
BLOOMINGDALE'S New York 22, N. Y.	FOLEY'S Houston 1, Texas
BOSTON STORE Milwaukee 3, Wisc.	LAZARUS Columbus 15, Ohio
BURDINE'S Miami 47, Fla.	SANGER'S Dallas 22, Texas
FEDWAY STORES Cincinnati 2, Ohio	SHILLITO'S Cincinnati 2, Ohio

There's no —

MAGIC FORMULA

Finding himself giving the same advice to scores of graduates who feel they are climbing their company's promotional ladder too slowly, the author has compiled his facts in an article to which many students may well be referred in the future.

BY JOHN W. STEELE
Commerce Placement Director, The Ohio State University

"So YOU want a promotion? What have you done to deserve advancement?"

How many times this response is obtained from a superior! Most college graduates (especially those recently out of school) are anxious to climb the promotional ladder of success to a management position. The above rebuff often occurs because the alumnus has not prepared himself for promotion. So often, indeed, has such been the case that it has seemed wise to formalize the suggestions which are called for in setting these alumni on the right road for personal progress.

Actually, future promotions will depend entirely upon the answer to a very simple question—what kind of reputation has he built? The day-by-day impressions he makes on other people (supervisors, fellow employees, customers, etc.) will slowly develop a reputation for him. There is no magic formula for promotions!

One of the major items for him to keep in mind in building this reputation is to remember that the lack of skills and knowledge account for only 10% of discharges and 24% of the deficiencies preventing promotion. More importantly, almost 90% of the discharges and 76% of the reasons for which promotion was not granted are attributed to character traits such as carelessness, lack of initiative, lack of ambition, non-cooperation, laziness, etc.* Since we can control, correct, and even eliminate undesirable character traits, these are the things on which the alumnus should concentrate in order to facilitate promotions.

As is the case with most human affairs, the really top man usually senses his route to promotion without much counsel. There are two times when such counsel can be given profitably to the average individual, however. The first instance is in preparing the student for what he may expect in his early years of business experience. The second is with the alumnus who in the absence of such counsel (or in the ignoring of it) returns to the campus to report that his progress has been disappointing. In either case, the following suggestions can be of value.

1. *Develop and maintain a cheerful disposition.* All mankind is favorably receptive to people who can smile and appear cheerful most of the time, and shuns individuals who appear to be grouches. Fellow employees and supervisors will welcome an individual who keeps the corners of his mouth turned up instead of down. A psychologist has remarked, "It takes 72 muscles to frown, and only 11 to smile; for the life of me, I don't know why people insist on working so hard." So the first suggestion is to develop a reputation as a "smiler" instead of a "griper", an optimist instead of a pessimist.

2. *Know the boss.* Everyone has a superior who has the responsibility for obtaining certain results from his part of the organization. It is up to the employee to find out the supervisor's likes, dislikes, preferences, habits, etc., and then cater to them. After all, the supervisor has the responsibility of coordinating everyone's efforts, so naturally he is seeking employees who are willing to cooperate and be a member of his team. Show respect to this member of management, and he will reciprocate. One who puts himself in his supervisor's shoes and tries to understand his problems will realize the pressures under which he operates and the importance of getting results. Thus, he can be

**So You Want A Better Job*, by Paul W. Boynton, pp. 4-5.

helped to accomplish his job by the employee's getting results on his assignments. Naturally he will reward those employees who are of greatest assistance to him.

3. *Be willing to work hard and assume responsibility.* This is probably the most important characteristic necessary for success in business. As Paul W. Boynton, the "Dean" of college recruiters, stated, "The real work of the world is not done by the people who are always watching the clock." For the employee who is able to relieve his employer of more and more duties and show by his efforts that he is able to assume more responsibility, it is just a matter of time until promotion to a position requiring more decision-making, with the usual addition of more money, prestige, and advancement.

No Lack of Opportunities

4. *Show initiative.* Opportunities arise almost every day to step forward and volunteer for assignments. Similarly, there will be many occasions when persons having authority will not be present to make a decision, and the employee can exercise his own initiative. There is opportunity for the individual who thinks for himself, is willing to assume new assignments, volunteers for extra work, and otherwise demonstrates to his superior that he is a self-starter; or who, when asked for an opinion, indicates by his answer that he did original thinking. Few members of management really like to have yes-men on their team.

5. *Look for improvements and ideas.* Every person in a managerial position is seeking employees who can make suggestions for shortcuts or improvements, give ideas for new or better ways of doing things, suggest new products or new uses for old products, and in other ways expedite the work of that part of the organization. If one is constantly aware of the need, and continually listens and looks for such improvements, the ideas will come. The employee who thinks for himself is sure to warrant a promotion by the number and quality of the ideas or improvements he can suggest to his supervisor, for, after all, no one else knows his job as well as he does.

6. *Develop the ability to express yourself clearly.* One who aspires to more responsible positions must develop the art of communication, both oral and written. After all, any leader or manager's instructions must be given to his employees either in writing or by talking. To be understood by others, win their approval, and have orders carried out efficiently, one's thoughts, plans, or instructions must be stated so clearly that there will be little chance of misinterpretation or misunderstanding. Just as with weightlifters, debaters, swimmers, etc., constant practice is necessary to develop the talent to communicate skillfully and effectively.

7. *Do a complete job of every assignment.* Every supervisor desires employees who can take a given assignment and do a thorough job with it. A reputation for thoroughness and reliability can easily be developed by accepting every task as a challenge instead of a chore, and then using intelligence, initiative, and perseverance to "wrap it up" to completion. This idea is called the "completed staff work doctrine", and all persons aspiring toward higher levels should certainly make this concept part of their daily work habits.

One of the best examples to illustrate this point of view was the article published in the New Britain Machine Company's employee magazine. Here is the condensed story with a big moral to explain pay differentials:

"Three brothers went to work for the same company at the same salary. A year later, one was getting $300 per month, the second $400, and the third $600. Their father felt this was unfair and went to the sons' boss to find out why. The supervisor said, 'I'll let them explain why.' He then called each son in turn, and gave him this assignment: 'I understand the ship *Oceanic* has just docked. I want you to go down to the pier and get an inventory of the cargo.'

"Jim, the lowest-paid son, got the story in three minutes. 'She carries 2,000 seal skins,' he said. 'I got that from the first mate over the phone.'

"Frank, the $400 man, took an hour. He came back with a list showing 2,000 seal skins, 500 beaver and 1,100 mink pelts.

"George, the $600 man, didn't return for three hours. 'The *Oceanic* carries 2,000 seal skins,' he began. 'They can be had at $5 each, so I took a two-day option and wired a prospect in St. Louis. I think he will buy at $7 if that's OK with you. I found 500 beaver pelts aboard; I've learned through a phone call we can sell these at $700 profit if you agree. There are also 1,100 mink pelts aboard, but they are of such poor quality that I didn't try to do anything with them.'

"When George had gone, the boss turned to the father and smiled. 'You see, Jim doesn't do as he's told; Frank does just what he's told and no more; but George does what he's told and then goes on to take advantage of the chance to help the firm. He has combined good judgment and initiative to get where he is.'

"The father was convinced."

Respect and Friendship Count

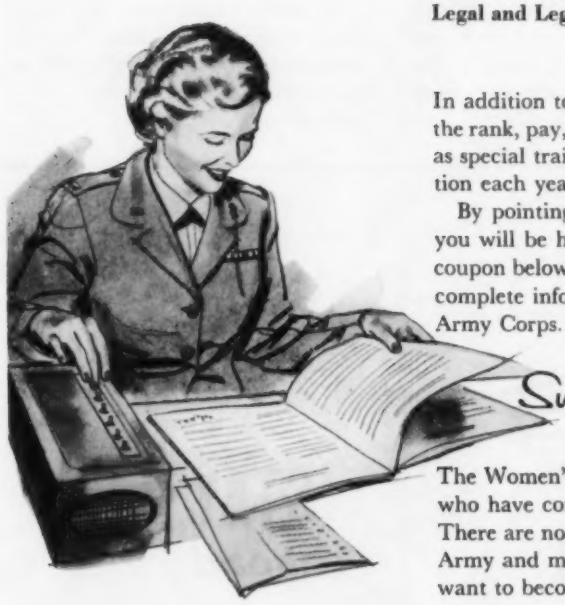
8. *Learn to get along with other employees.* Every manager is anxious to have his group of employees work together and cooperate with each other and other members of the organization; therefore he values the employee who gets along with those in his own and other departments. Supervisors are glad to have members of their team who conduct themselves so that they win the respect of their colleagues, and who are liked by them. Some of the best friendships are formed among employees in the same department or company; in times of stress or dejection, fellow employees can boost morale, cover up for deficiencies, and otherwise help

Guidance Counsellors!

Alert your students to the
EXECUTIVE POSITIONS for WOMEN
in the UNITED STATES ARMY

After graduation, your students can start immediately in EXECUTIVE positions of vital importance to their country. The Women's Army Corps offers commissions as Second and First Lieutenants to selected, qualified college graduates, age 20 to 33. Challenging, responsible jobs with a future are now open in the following branches:

Personnel and Administration
Intelligence
Information and Education
Legal and Legislative
Comptroller
Public Information
Logistics
Training and Special Services
Civil Affairs and Military Government



In addition to a rewarding EXECUTIVE position, the WAC officer enjoys all the rank, pay, and prestige of a commissioned Army officer, plus such benefits as special training courses, foreign assignments, one full month's paid vacation each year, and unique opportunities for a full cultural and social life.

By pointing out the advantages of this EXECUTIVE future in the ARMY, you will be helping both your students and your country. Mail the handy coupon below, or telephone your local Army Recruiting Station TODAY, for complete information on EXECUTIVE opportunities offered by the Women's Army Corps.

Summer Training for College Juniors:

The Women's Army Corps will select a limited number of qualified women who have completed their junior year for 4 weeks' training, summer 1958. There are no commitments. The young women receive an orientation in the Army and may make application for a commission after graduation if they want to become an officer in the United States Army.

Serve your Students...
Serve your Country

WOMEN'S ARMY CORPS

THE ADJUTANT GENERAL, Department of the Army
Washington 25, D. C.
Attention: AGSN-L

JCPW 12-57

Please send me——(amt.) Guidance Booklets on the EXECUTIVE career opportunities offered a college graduate in the Women's Army Corps. Check if interested in the 4 weeks summer training program ☐

NAME _____

ADDRESS _____

CITY _____ STATE _____

ORGANIZATION _____ POSITION _____

in making a better impression. Therefore, it would be profitable for all individuals to develop the ability to get along with other people; the best advice on developing this important trait is obtained from the Bible: "Do Unto Others As You Would Have Others Do Unto You."

9. *Be honest.* Although this is one of the oldest maxims, it is worth repeating often. Honesty is still the best policy, and all supervisors hope to have employees who can be trusted. There will never be any question about the integrity of the employee who scrupulously observes ethical and honest practices in his day-to-day relationships with his fellow workers, management, or customers.

10. *Don't stay in a dead-end job.* The individual who desires promotions must be smart enough to recognize a dead-end job when he is in it, and then must use his imagination and initiative to do something about it. In all too many cases, a dead-end job reflects a dead-end person; why should anyone be promoted out of a rut if he is content to remain in it?

11. *Don't be a job jumper.* More and more firms are adopting the policy of promoting from within, and it becomes increasingly difficult to join a major organization as a person grows older. The person with 20 years of progressively more responsible experience with one firm is more valuable and deserves promotions more emphatically than the one who has had 20 jobs in 20 years with 20 different firms.

12. *Aspire for attainable goals.* It is much more important and rewarding to concentrate on each day and satisfying the boss than to waste energy by thinking and dreaming about the "ideal job." As Boynton said, "Don't hitch your wagon to a star, or you may end up a burned-out meteor." Therefore, try to climb the ladder of success only one rung at a time, although this method will give but one promotion at a time, over a lifetime, it is much surer and much more satisfying.

Although there are many more suggestions which can be made as assistance in obtaining promotions, the above dozen will serve as a starter. And here is one more for moving along in the business world. Remember to always keep a sense of humor, in order to see things in their proper perspective, and not get so serious and wrought up that there is crisis after crisis to face. Since all of us spend more time working than we do in any other activity, we may as well get some fun out of the job and let some humor relieve some of the tensions.

In addition, each person should develop a personal philosophy of life so that he has a yardstick to apply to all the personal problems which are sure to arise.

Lastly, always keep in mind the concept of service to others if we want true development. There is no better advice than that in the Bible which states, "Success in life depends not on amassing wealth or on winning honors, but on *serving God and neighbor.*"

Engineers . . .

Every week, Philadelphia Electric spends more than one million dollars to improve and expand its facilities in Delaware Valley. This tremendous growth began after World War II. Every sign points to its continuing and accelerating.

There's a part for engineering graduates in this saga of progress . . . a vitally interesting role in the design, building, and operation of new plants, substations, and transmission lines—both gas and electric—now and in the future.

PHILADELPHIA ELECTRIC COMPANY

GEORGE L. HARVEY, JR., Director Employment Division • Philadelphia 5, Pa.

In these days nearing Christmas . . .

If your house is like our house, now that the calendar has rounded into December, there's one prime topic of talk and thought—Christmas.

And if there are youngsters around your house—sons, daughters, nieces, nephews, grandkids—as there are around the houses of most of Dow's Technical Recruiting staff, they're bubbling and bursting with anticipation of one visitor—Santa Claus.

This condition, probably, led one of our staff to reflect that recruiters sometimes seem to regard the Placement Director as a year-round equivalent of Santa Claus . . . with a limitless variety and inexhaustible supply of applicants with *just exactly* the qualifications desired. Someone else mused that, considering how often Placement Directors *do* introduce us to applicants who are *just right*, maybe there is a kinship!

If so, it's one more reason, added to the many courtesies and helps you have extended to Dow's recruiters in the past, for voicing our best wishes for Happy Holidays.

Our staff men have enjoyed visiting your campuses during the fall months and we're looking forward to more such visits in the months ahead. But for right now—

Merry Christmas and a Happy New Year!

FRED ANDRIESSON CALIFORNIA	J. P. MIDDLETON TEXAS	FRED NILES COLORADO	GORDON CLACK MICHIGAN	FRANK HAMMOND LOUISIANA	BOB RAMSEY VIRGINIA	BILL WHITE CANADA

DOW

THE DOW CHEMICAL COMPANY

Left to right: Lou Bernardi, Notre Dame, '54; Norman Lorenson, Mich. St., '55; Ernest Schurmann, M.I.T., '53; Dick Swenson, Purdue, '50.

Go with us... and you'll Grow with us!

CONVAIR
FORT WORTH

CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION

PLACEMENT

news

RECRUITMENT

■ The National Retail Dry Goods Association is recommending a "crash" program of community action to its 8,200 member stores to interest more able young people in retailing careers, it has been revealed by J. Gordon Dakins, executive vice president of the Association.

The program, developed by the NRDGA Committee on Careers in Retailing, urges NRDGA members to take immediate steps to stimulate cooperative efforts by retailers in their own communities to carry the story of retailing's unlimited career opportunities to high school and college students and their advisors.

B. BROOKE BRIGHT

■ B. Brooke Bright has been appointed to the Central Personnel Staff of Chrysler Corporation in Detroit, reporting to Robert F. Bowers, Director of Management Personnel. Mr. Bright will have responsibility in a staff capacity for the Corporation's college recruiting and college relations program and matters relating to orientation and training of new college trained employees. He will also serve in an advisory capacity to the Director on other matters relating to the management employees of Chrysler.

■ The American Personnel and Guidance Association will hold its annual convention during the week of March 31 to April 3, 1958, with headquarters in the Sheraton-Jefferson Hotel, St. Louis, Mo. Those interested in obtaining information concerning registration should write to: Miss Marie Bergmann, 5040 Grace Ave., St. Louis 16, Mo.

■ Lucille M. Refshauge, president of The American Dietetic Association, has announced plans for production of a recruiting motion picture which will seek to remedy the shortage of dietitians.

She explained the motion picture plans at the 40th annual banquet of The American Dietetic Association in Miami Beach, saying, "The national shortage of dietitians is so critical that three out of every five hospitals in the U.S. today are without qualified dietitians."

Although hospitals are growing in number and in patient-load, Miss Refshauge pointed out that, at the present rate, only 600 dietetic interns are preparing annually for careers in dietetics, whereas 15 years ago more than 900 young people completed internships each year.

■ Dr. Samuel D. Schaff, who has been on the staff of his alma mater since 1948, has been made director

DR. SAMUEL SCHAFF

of testing and vocational services at Denison University, Granville, Ohio, effective with the departure of Dr. Robert L. McCleery recently. McCleery resigned to take over the duties of consulting psychologist at his own alma mater, the University of Denver, in mid-October.

Dr. Schaff joined the staff as instructor in education. Last year he was assistant to the dean of the college and acting chairman of the department of education. He takes over his new position with a considerable knowledge of the counseling program at Denison. He has been a member of the counseling corps for a number of years. The past three years he has been responsible for getting the pre-registration of all entering freshmen

during the summer preceding their matriculation. At Denison the education department has handled its own placement of teacher-trained students.

After his graduation Dr. Schaff taught in Western Military Academy, Alton, Ill., and in Carnegie Institute of Technology. During some of the war years he spent his summers as cost analyst with Solventol Chemical Products, Inc., Detroit, Mich. He took his M.A. degree from Ohio State University and his Ed.D. degree from Teachers College, Columbia University.

■ Liberal arts graduates are increasingly sought by New York employers, according to a report issued by the Alumnae Advisory Center. The Center is a clearing house for college women and New York jobs.

During the first six months of this year, 373 applicants from 97 American colleges and 5 foreign universities applied for jobs. 1,460 job openings were listed, and 55 alumnae were placed. 19% of the applicants were 35 years and over (the range was 18 to 81); 24% of the placements were in this older age group. During the summer months, almost twice as many alumnae applied for jobs as during the corresponding period a year ago.

A feature started in January to enable graduates of non-member colleges of the Center to obtain the same benefits as those from supporting institutions is proving to be successful. Through this, an individual alumna may join the Center herself for $10 a year.

■ The product of the nation's great graduate schools today has specialized in a specific area of knowledge but need not continue to be a specialist, for he has a broad base of knowledge. So says Dean Conrad A. Elvehjem of the University of Wisconsin Graduate School.

The distinguished biochemist and long-time dean discussed the present and the future of graduate education in a report to the University of Wisconsin Board of Regents.

The properly trained and motivated Ph.D., Dr. Elvehjem said, "has mastered a definite field of knowledge so that he is familiar not only with what has been done in the field but as well with its potentialities and opportunities. He has learned that difficult problems can be solved through properly conducted research."

"The experience gained in selecting and carrying out a piece of research," he added, "is of significant value in preparing for an intellectual career, whether as a research scientist, a worker in the social field, or a college teacher."

Dean Elvehjem predicted both an increase in the demand for Ph.D. trained people, and increasing difficulties in providing top quality degree candidates sufficient to fill the demand.

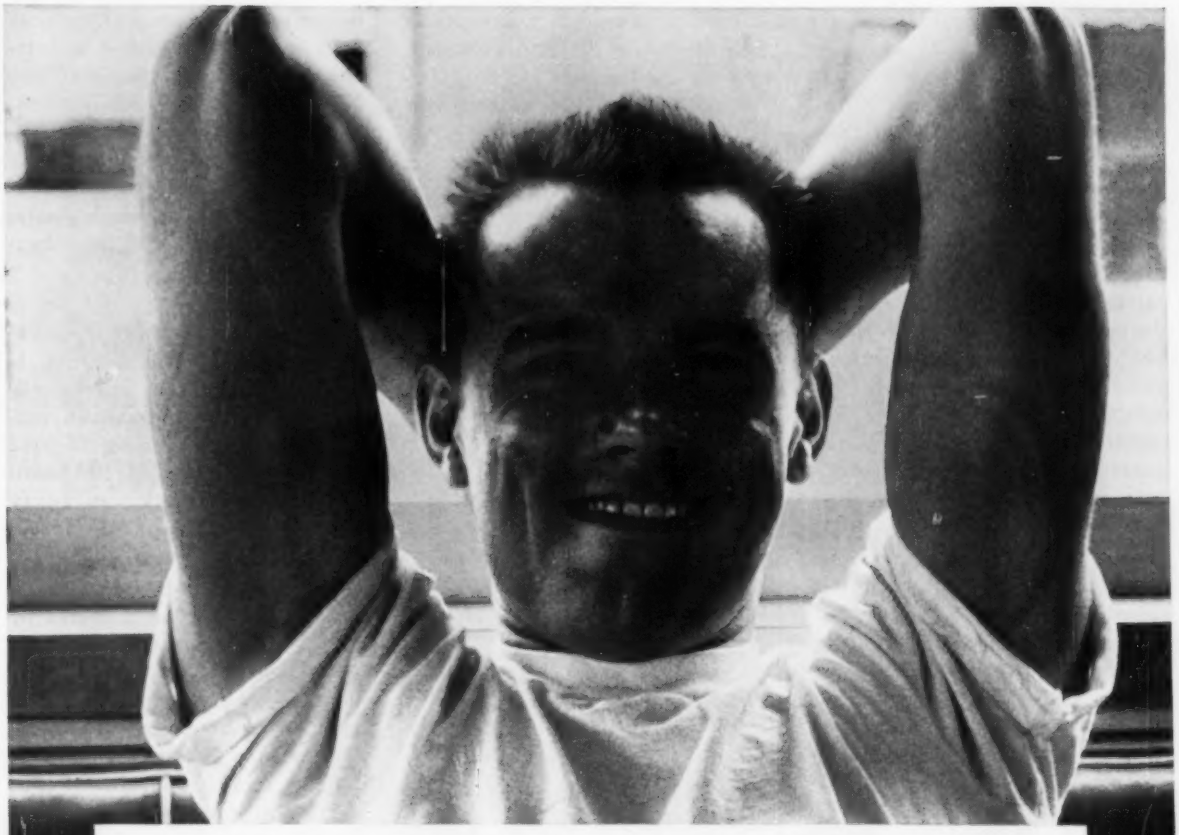
■ Starting salaries for graduates in chemistry and chemical engineering are up 8 per cent this year, with $675 a month the median for Ph.D. engineers, according to a nationwide survey reported in today's *Chemical and Engineering News*.

The survey—conducted annually by the American Chemical Society through questionnaires sent to more than 5,000 new graduates—shows the largest jump in starting salaries since 1952, its first year, writes Dr. B. R. Stanerson, assistant secretary of the Society. The gain is sizable even in view of the 3.4 per cent rise in the consumer price index during the same period, Dr. Stanerson points out.

The median figure for starting Ph.D. chemists was $650, and median salaries for those with the master's degree were $525 for chemical engineers and $485 for chemists, the report states. Corresponding figures for those with the bachelor's degree were $460 and $435 a month. Women chemists received somewhat lower starting salaries than men with the same degrees, and their percentage gains for the year were smaller.

"Experienced" graduates usually received offers $15 to $25 higher than the basic starting scale if the experience was "significant," Dr. Stanerson says. On questioning employers he found that a high proportion of chemistry and chemical engineering students work at

Recruiting posters etched on magnesium are now being sent out by the Metallurgical (Magnesium, naturally) Laboratory of the Dow Chemical Company. Tacking one up is Jay Frederickson, in charge of professional recruiting for the laboratory in Midland, Mich.



Graduates can build their future at Crane Co.

The excellent career opportunities in this growing company are virtually unlimited.

We make more than 50,000 product items . . . serve virtually every industry in the country. Because of this widespread diversification, we can satisfy a great variety of interests and many different talents.

Here are just a few of the careers at Crane:

Engineering—Openings for mechanical, metallurgical, ceramic, chemical, sanitary, heating, hydraulic, welding, and mineral engineers.

Manufacturing—Challenging opportunities for mechanical and foundry engineers leading to positions of responsibility.

Research and Development—These engineers will work toward the development of titanium and atomic energy; also in new ferrous and non-ferrous metals and alloys.

Sales—B. S. and B. A. degrees. Opportunities to sell products through 140 company branches to industry; to plumbing, heating and air conditioning dealers and wholesalers.

Control—Business graduates qualify for openings in operational costs, general accounting, auditing, leading to supervisory responsibilities.

Finance—Openings in credit and dealer relations for Economics and Business graduates with long-range career plans.

Graduates unable to arrange an interview on campus should write to:

Manpower Development Department, Crane Co., 836 South Michigan Ave., Chicago 5, Illinois

CRANE CO. VALVES • FITTINGS • PIPE • KITCHENS
PLUMBING • HEATING • AIRCRAFT PARTS • TITANIUM

summer technical jobs, and the consensus was that 25 weeks or more of such work was significant. Chemists with a master's degree and such experience received $50 a month more than those without the experience, the survey indicated.

Ten per cent of the chemists with the Ph.D. degree received more than $702 a month, and an equal percentage received $456 or less, the report shows. The latter group was entirely in the academic field, and on the whole Ph.D. chemists in industry commanded salaries 38 per cent higher than their classmates who chose teaching careers.

As usual, the petroleum industry ranked at the top for salaries paid to starting chemists and chemical engineers with the bachelor's degree, according to Dr. Stanerson. Contractors for the Government paid amounts comparable with other industry, research institutions less, and Government itself still less, he says, adding:

"An anomaly appears in the biological and pharmaceutical industry, where chemical engineers fared as well as, or better than, those in other industries, but where chemists received the lowest median salary paid by any industrial group."

Inexperienced chemists with the bachelor's degree were offered a median of $460 in the West South Central States, as against $405 in New England, the author says.

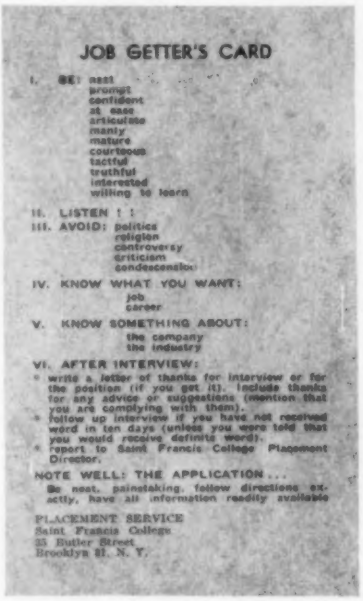
■ To further improve its position in the competition for talented college people, the Federal Government is opening its Federal-Service Entrance Examination this year to college juniors in addition to seniors, college graduates, and others of equivalent experience, the Civil Service Commission has announced.

Also, job appointments, effective after graduation, may be offered the juniors if they pass the examination and their names become available on the lists of eligibles to be established. As in the past, such job offers may also be made to seniors.

The first Federal-Service Entrance Examination held since the change was scheduled for November 16. Subsequent examinations will be held in January, February, March, and May, 1958.

The examination, first given two years ago, is designed to help fill the Government's yearly need for more young people of college-caliber who can be placed in jobs at the entrance level and who have the potential to develop into the top managers, technicians, and specialists of the future. Positions filled through the examination are in almost every kind of work. During fiscal year 1957, more than 7,500 job appointments in 175 different occupations were made of persons who passed the examination. The Commission estimates that during the next 12 months at least the same number of entrance-level jobs, at salaries ranging from $3,670 to $4,525 a year, will be filled from the FSEE lists of eligibles.

The Commission emphasized that Government needs for college-caliber people are increasing each year despite any over-all reductions in the Federal work force that may occur at any one time. Although turnover in Government compares favorably with that of private industry, its effect on the large work force needed by modern government is such as to require that from 200,000 to 300,000 job appointments be made each year. In addition, the increasing complexity of many of the jobs to be performed is requiring that each year a greater number of them be filled by college-caliber people.



JOB GETTER'S CARD

I. BE: neat
prompt
confident
at ease
articulate
manly
mature
courteous
tactful
truthful
interested
willing to learn

II. LISTEN ! !

III. AVOID: politics
religion
controversy
criticism
condescension

IV. KNOW WHAT YOU WANT:
job
career

V. KNOW SOMETHING ABOUT:
the company
the industry

VI. AFTER INTERVIEW:
* write a letter of thanks for interview or for the position (if you get it). Include thanks for any advice or suggestions (mention that you are complying with them).
* follow up interview if you have not received word in ten days (unless you were told that you would receive definite word).
* report to Saint Francis College Placement Director.

NOTE WELL: THE APPLICATION ...
Be neat, painstaking, follow directions exactly, have all information readily available

PLACEMENT SERVICE
Saint Francis College
35 Butler Street
Brooklyn 1, N. Y.

Devised by John J. Conron, Director of Public Relations at St. Francis College, the above card has proven to be unusually effective in preparing the seniors for placement interviews.

■ Year-round utilization of educational facilities and faculties in the United States to increase the output of trained graduates, particularly in the training of civil engineers, was urged by the Board of Direction of the American Society of Civil Engineers at its 96th Annual Convention in New York.

The action of the Board was taken in adopting a resolution offered by the Committee on Engineering Education, which had conducted a long-range study of the problem of providing some means of accommodating the increasing number of students seeking admission to educational institutions.

Taking cognizance of the fact that educational facilities throughout the United States are being taxed to their utmost, that the demand for civil engineering graduates greatly exceeds the supply and that provision for increasing facilities and faculties presents costly and difficult problems, the resolution recommended the development of programs whereby facilities and faculties could be utilized throughout the year.

■ "Straight-A" students in college can look forward to marital and financial success in later life, if they follow the pattern set by 61 honor graduates of New York University.

Ninety-five per cent of these alumni—all of whom graduated with summa cum laude honors between World Wars I and II—are married, and not one has been divorced or separated. Almost all have families.

About half (46 per cent) of the honor graduates earn more than $15,000 a year. Twenty-one per cent earn more than $25,000, and

"I want to be a Boston Banker when I grow up!"

We have to admit that it would be hard to find a five-year-old who would rather be a Banker than a Jet Pilot, or a Fireman, or a Pitcher for the Braves. But here at *The* First National Bank *of* Boston there are hundreds of *ex*-five-year-olds who have discovered that banking is as exciting, challenging, and rewarding as any career you can name.

Here at *The* FIRST (New England's oldest and largest bank) there's never a dull moment. Every problem is different, every decision is important. You become intimately acquainted with almost every type of business firm. You deal not only with facts and figures, but with people and their financial problems. Finding the right solutions is a great responsibility, doing the job well brings you real personal satisfaction.

The FIRST offers you the opportunities, and diversification of interests that only a major International Bank could offer. If you're the right man — there's an exciting career waiting for you at *The* FIRST. Would you like more information about job opportunities with *The* First National Bank *of* Boston? If so, write to Emory C. Mower, Vice President & Personnel Officer, 67 Milk Street, Boston, Mass.

The FIRST
NATIONAL BANK *of*
BOSTON

★ *Founded* 1784 ★

Member of the Federal Deposit Insurance Corporation

two of the alumni have annual incomes above $50,000. (Seventeen of the 61 graduates are women.)

New York University's "Alumni News" conducted the survey and reported the results in its November issue.

Among the 61 honor graduates are 14 physicians and 12 accountants. Seventeen teach in colleges, a number of them on a part-time basis. Others have occupations in the fields of banking, law, advertising, psychology, writing, and business. One alumnus is the president of a railroad.

Thirty-four per cent of the graduates said that their outstanding academic records were probably of some help in obtaining jobs and promotions. Two alumni found their honors a burden; they said that prospective employers were frightened away.

Twenty-five per cent of the group were employed full-time while at NYU, and 43 per cent held part-time jobs. A number expressed appreciation for a program that enabled them to work while attending college.

■ Every year, the Pan American Union and other agencies active in the field of inter-American relations receive an increasing number of inquiries from United States citizens who wish to enrich their cultural experience and to contribute personally to inter-American understanding by teaching in Latin America.

Opportunities do exist for qualified persons to fulfill this interesting plan, according to the Union which points out a few facts for the general information of those who wish to apply for teaching positions in Latin America.

Although occasional exceptions are made in the case of unusually qualified personnel, a general minimum requirement for such positions is a teaching certificate from a recognized teachers' college or school of education. Frequently a year or more of teaching experience is also required. A knowledge of the language of the country where the candidate is to teach (in most cases, Spanish; Portuguese in Brazil; French in Haiti) is not universally required, but preference is generally given to candidates possessing such knowledge. Teachers under contract in this country should also remember that, in the majority of Latin American countries, the school year does not coincide with that of the United States, and should be prepared to adjust their arrangements to the school year of the particular country in which they wish to teach.

In most of the Latin American republics, citizenship of the country concerned is a prime requisite for employment in the public school system, the Pan American Union says. Foreigners are rarely accepted for teaching positions at the elementary level, and only occasionally, in the case of exceptionally well-qualified personnel, at the secondary level. Opportunities are somewhat more frequent for persons with sufficient background to teach at the university level, particularly if the applicant is a recognized authority on a given subject.

■ One of the biggest competitive battles being waged today by small business is for competent personnel, a panel of businessmen agreed in Toledo, O., during the third in a

COLLEGE INTERVIEW FORM

NAME: Mr. Miss Mrs.
DEGREE MAJOR MINOR DATE OF GRADUATION
PRESENT ADDRESS PHONE
PERMANENT ADDRESS PHONE
Date of Birth U. S. Citizen Height Weight
Married or Single Number of Dependents
Physical Limitations

SCHOOL:	NAME OF SCHOOL	LOCATION	COURSE TAKEN	DATES ATTENDED
High School				
College				
Other				

COLLEGE AND COMMUNITY:
Honors
Professional Societies
Activities (College)
Hobbies and Outside Interests

% OF COLLEGE EXPENSES: Earned by working Scholarship G. I. Bill

GRADE POINT SYSTEM A = Grade Point Average, Junior Year
Class Standing, Junior Year 1st 2nd 3rd 4th Quarter

WORK EXPERIENCE: Include FULL TIME, PART TIME, SUMMER WORK			DATES
Employer	Location	Type of Work	From -- To

MILITARY SERVICE
Veteran Branch of Service Rank Dates
Draft Classification Military Reserve Unit Yes No R. O. T. C. Yes No

TYPE OF WORK DESIRED:
1st Choice
2nd Choice
3rd Choice
Locations Date Available

REFERENCES: List 1 faculty and 2 personal: (show addresses)

Please use reverse side of this form for any other information pertaining to this application
FORM MAPOA-1 This form has been adopted by the Middle Atlantic Placement Officer's Association

To minimize variation in college interview forms, the Middle Atlantic Placement Officers Association has created and adopted the one above.

will your first job measure up to your expectations?

Headquarters of General Mills, Inc. and home of Betty Crocker, Minneapolis, Minnesota. A short distance away is beautiful Lake Minnetonka, nestled in the pine and balsam covered area immortalized by Longfellow in his poem "Hiawatha."

It will if it's the *right job* for you. Choosing that first job is one of the most important decisions you'll ever have to make. That's why you should evaluate opportunities at General Mills before coming to any conclusions.

Of course you want your first job to be challenging and rewarding. You have something to prove. But it must also be tailored to your individual interest and goals.

Ideally, your first job will be all that. In addition, it will equip you along the lines you like best. At the same time it will provide the security you have a right to expect, hold the promise of the future you want.

At General Mills we have such jobs for young men who qualify. If you are emotionally mature and anxious for personal growth, you're well on the way toward qualifying.

We are more interested in the man as a man—and his management potential—than in his course of study or academic achievements. We want him to be with us a long time. Because, together "The Future is Our Frontier."

Who is General Mills?

General Mills is the world's largest miller of flour. But we make many other grocery products too—products like Wheaties, Cheerios, Bisquick—all household favorites. And, of course, General Mills is the home of Betty Crocker, America's best known authority on food.

Although the flour and food industry is the foundation of our company, it is only one of our activities.

We have long been dedicated to research and to growth based upon research. This research, and alert market analysis, has taken us into many, diverse fields.

Today we provide essential products and services for nearly every American industry: organic chemicals, fortified farm feeds, mechanical and electro-mechanical devices and research and engineering services, household and industrial sponges, soybean oils and meals, vitamin concentrates, vegetable gums, glutamic acid products, and on and on. Annual sales exceed half-a-billion dollars.

We employ nearly 14,000 persons, 2500 of whom are members of management. We believe in operational decentralization and small work units. This necessitates a larger than usual number of responsible management positions for capable men to fill. To fill management vacancies from within requires the building and development of men on the job—*which we do!*

Our general offices and research laboratories are in Minneapolis, Minnesota—in the land of 10,000 lakes, where sportsmen find thrills and beauty every season of the year. Several divisional headquarters are also located in Minneapolis. But we also have facilities in 53 other American and foreign cities, 68 sales offices throughout the United States.

How does General Mills train its men?

First there's a brief orientation period which enables the new man to become acquainted with our people, organization and policies.

Then comes job assignment and responsibility within the department or division he has joined. (We believe that a young man learns best by doing.) When a person has demonstrated his capabilities and readiness for additional experience he is given new responsibilities.

His progress is closely watched. He enjoys a close "manager-man" relationship, designed to build self-development and self-reliance.

Upon satisfactory performance, additional assignments are given to provide the man with the experience he needs for still greater responsibilities in the fields of his interests.

The new man helps plan his assignments. He's never forgotten. He's always an individual. He participates in training conferences and has the opportunity to meet and confer with managers and executives of the company.

What employment opportunities are available at General Mills?

There are many. Some of them are listed below. Remember, we are more interested in the man as a man—and his management potential—than in his course of study or academic achievements.

Liberal Arts Majors	Opportunities in sales, production, advertising, purchasing, personnel administration, and public relations.
Business Administration Majors	Opportunities in sales, production, accounting, advertising, finance, personnel administration, public relations, purchasing, and traffic.
Chemical Engineers	Opportunities in production, research sales, and quality control.
Mechanical Engineers	Opportunities in production, maintenance, research, and development, and sales.
Electrical Engineers	Opportunities in sales, research and development.
Aeronautical Engineers	Opportunities in research and development.
Physicists Chemists Biochemists Meteorologists Micro-Biologists	Opportunities in production and experimental work.

Our representatives will soon be visiting many schools—possibly yours. Ask your college placement officer to arrange an interview for you now. In the event a representative does not call at your campus (there are so many to get around to) send for more information about opportunities with a future at General Mills. We're interested in you—and think you should be interested in us. Write Personnel Department, General Mills, Inc., Minneapolis 1, Minnesota.

General Mills

Minneapolis, Minnesota

The Future is Our Frontier

series of discussions devoted to small business problems.

Howard A. Trumbull, president of National Family Opinion, Inc., and committee chairman, prefaced the remarks of the panel members with the statement that fierce competition for personnel imposes a hardship on small business because so much of its capital goes into the training of employees, and losing them means a large financial loss.

"Hiring and retaining proper employees can be the difference between your profit and loss," Robert A. Stough, president of Robert A. Stough & Associates, told the audience. Mr. Stough, a personnel consultant, was moderator.

Because many small firms cannot afford their own personnel and industrial relations programs, they must rely on do-it-yourself methods, the speakers emphasized.

The panelists provided these tips on procurement procedures: Analyze the position, not the person who fills it. List what YOU think the job entails. Rate the job carefully.

Establish salary ranges for each job. If you must, seek accurate information on salaries from the government or other agencies. Then you can be more accurate in establishing salary ranges.

■ For new college graduates with executive potential, challenging career opportunities in life insurance are today more numerous and varied than at any previous time.

Opportunities exist in both head office administration and sales, according to life insurance leaders who met in Hartford, Conn., for a two-day conference with placement directors from 35 major colleges and universities in the northeast.

While many college students prepare for management with business school training, it was pointed out by Edward Robie, second vice president for Equitable Life Assurance Society, that a liberal arts education is also "an excellent foundation for future executives."

Stepped up interest by life companies in recruiting college graduates was predicted by Holgar J. Johnson, president of the Institute of Life Insurance. He cited a recent survey to show that companies feel the number of new graduates now being employed is not sufficient to meet their future needs for supervisory and executive personnel.

Conference chairman was A. Rogers Maynard, second vice president for Metropolitan Life; vice chairman, Philip H. Yost, senior agency assistant for Connecticut General Life.

The need for 50,000 additional salesmen was stressed by Leland F. Lyons, vice president for New York Life, "if our business is to reach its full potential and provide the American people with the insurance they need." Earlier Mr. Johnson had noted that while life insurance ownership per family is increasing, it is still less than $8,000. This amount he termed "only a small fraction of the economic value of a man to his family and to society as a whole."

■ Eighty-five per cent of the men who graduated from the University of Wisconsin last June had their work all cut for them by the time the echoes of the UW's graduation ceremonies had died away.

A post-graduation survey of men graduates of the UW Class of '57, conducted during the past summer, reveals that barely 14 per cent were seeking employment in the days after graduation, and barely one per cent were still undecided or did not report on their post-graduation plans.

The vast majority of 85 per cent knew exactly what they were going to do and where they were going in the early post-graduation years as follows:

Nearly 50 per cent accepted jobs;

Nearly 22 per cent were continuing their educations in graduate, law, or medical schools; and

Nearly 14 per cent were entering military service.

The survey, conducted by Dr. J. Kenneth Little, professor of education and director of institutional studies at the University, is based on information supplied by 1,100 or nearly 95 per cent of the senior men who graduated last June.

A total of 540 or nearly 50 per cent of the UW graduating men reported that they had accepted jobs immediately after graduation. About three-fourths of these reported information on their starting salaries.

The survey reveals that most of the men took jobs in Wisconsin, but many accepted positions which took them to as many as 23 other states and U.S. territories.

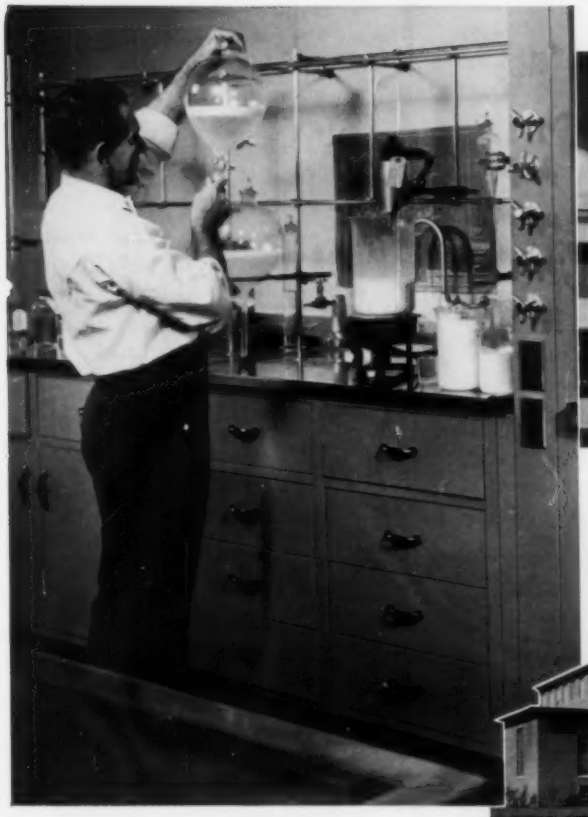
Starting annual salaries ranged from $3,000 for a general liberal arts graduate to $7,600 for an engineering grad. The median of starting salaries ranged from $3,750 for pharmacy graduates still serving internships in Wisconsin pharmacies to $5,750 for engineering grads on regular jobs.

The survey reveals that in engineering annual starting salaries for the UW grads ranged from $4,000 to $7,600 with the median at $5,750; in commerce, salaries ranged from $3,500 to $6,000, median $4,800; agriculture, $3,000 to $6,000, median $4,500; letters and science, $3,000 to $6,000, median, $4,800; education, $3,500 to $4,500 for the school year, median $4,200; journalism, $3,500 to $5,000, median $4,250; pharmacy interns, $1,200 to $4,500, median $3,750; and in law, with many unable to report salary information because of the nature of their work, starting salaries ranged from $3,500 upward.

■ Poor presentation loses many fine job opportunities for applicants who would otherwise receive consideration, college students are told in a booklet prepared by New York University's Office of Placement Services.

The 12-page brochure contains a list of 93 questions "most frequently asked by employers in interviewing college seniors" and "a list of 50 factors which can be responsible for costing an applicant a desired position." It has been made available to every student at the University.

"A job applicant properly prepared to present his qualifications



Petroleum, Humble and YOU

The petroleum industry requires keen, creative minds in its constant search for new oil reservoirs; for new and better techniques for producing petroleum; for better, more efficient refinery methods; for new processes in the exciting petrochemical field.

Engineers and scientists at Humble share in the dynamic progress and growth of a leader in the petroleum industry. Humble Oil & Refining Company is the leading producer of crude oil in the United States. Humble's Baytown Refinery is one of the largest in the world. Research centers in Houston, for development of better methods of exploration and production, and at Baytown, for research in refining, are making valuable contributions to the petroleum industry.

Because of their importance to the petroleum industry, engineers and scientists are given every opportunity for professional growth and personal advancement at the Humble Company. Guidance, lectures by leaders in various fields, and membership in professional societies afford each man valuable means of self-improvement.

At Humble, engineers and scientists grow . . . in their professions and in the Company.

A QUICK LOOK AT THE HUMBLE COMPANY

Area of Operation:	Texas, New Mexico, Florida, Alabama, Georgia, Mississippi, Louisiana, California, Washington, Arizona, Oregon.
Wells Drilled Annually:	900 - 1000.
Crude Oil Production:	Averages 350,000 barrels daily.
Refining Capacity:	280,000 barrels daily.
Retail Sales:	Texas and New Mexico. Leading Texas marketer.
Humble Pipe Line Co.:	Operates crude oil and products pipe lines in Texas; transports an average of about 750,000 barrels daily.

How to Apply

For full information on a career in the petroleum industry, visit or write: Personnel Division, Humble Oil & Refining Company, P. O. Box 2180, Houston 1, Texas.

HUMBLE OIL & REFINING COMPANY

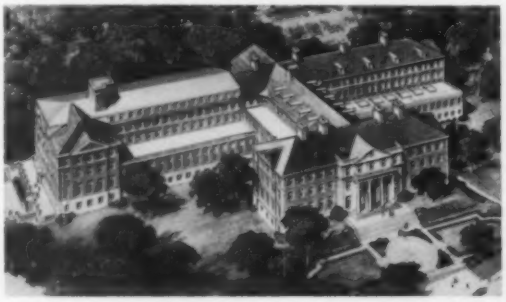
Refiners and Marketers of **Esso Extra** Gasoline

HUMBLE

Unusual Opportunity for 10 Men

SALES MANAGEMENT TRAINING PROGRAM

Connecticut Mutual conducts its sales activities through 81 offices headed by General Agents. In addition to being sales managers, they represent the Company in all insurance matters in their communities. They are men of broad executive ability and enjoy excellent incomes. Our Sales Management Training Program (limited to 10 men per year) prepares men to be General Agents.



This training program is outlined in our booklet "Sales Management Training Program and Other Career Opportunities for College Graduates."

Starting with an intensive four-month period in the Home Office (pictured here) followed by eight months of further training and service work in a field office, each part of the program is designed to develop initiative, sales ability, executive judgment and basic self-confidence.

OTHER OPPORTUNITIES, INCLUDING ACTUARIAL

We also have attractive opportunities in sales work (which may also lead to sales management) and in various administrative departments in Hartford. We are particularly interested in talking with mathematics majors and men who are interested in mathematics about excellent opportunities as Actuarial Trainees.

HOW TO APPLY

Write E. G. Walls, Jr., Superintendent of Agencies, The Connecticut Mutual Life Insurance Company, Hartford 15, Connecticut, for a booklet giving details and an application blank. A personal interview will then be arranged.

The Connecticut Mutual
LIFE INSURANCE COMPANY · HARTFORD

to a prospective employer," the booklet advises, "has an excellent chance of obtaining a job. A good presentation will frequently gain recognition, even though background and job experience may not be as complete as originally desired by an employer."

Among the questions listed as most frequently asked by prospective employers are the following:

Why do you think you might like to work for our company?

What percentage of your college expenses did you earn?

Do you have a girl? Is it serious?

When did you choose your college major?

What is your major weakness?

What extra-curricular offices have you held?

What types of books have you read?

What do you think determines a man's progress in a good company?

The list of 50 factors that can defeat an applicant in his job quest was compiled after consultation with 153 companies. Included are the following: poor personal appearance, overemphasis on money, failure to look the interviewer in the eye, limp handshake, condemnation of past employers, sloppy application blank, being late to the interview without good reason, superiority complex, and narrow interests.

Students preparing for a job interview are advised by the booklet to:

Go alone for your interview. Telephone for an appointment unless you are directed not to do so.

Be clean-shaven and neatly dressed. Girls should apply make-up with good taste.

When meeting your interviewer, pronounce your name distinctly. During your interview speak clearly and to the interviewer.

Answer questions simply and directly. Watch and listen to your interviewer for cues when to speak and when to listen.

At all times be courteous and gentlemanly, and at all times be honest in speaking of yourself and your qualifications.

WHICH DOOR WILL YOU OPEN AT RCA?

Good question! Possibly you have your answer. But more probably you could use some aid and advice in deciding just what kind of work you want in exactly what engineering field. Or maybe you have graduate work in mind, but aren't quite sure how you can swing more years in school. Engineering management at RCA has given years of thought to your problem. The plans they've come up with have helped many engineering and science graduates to achieve rewarding, satisfying positions. Here's a brief outline of RCA opportunities open to you:

DESIGN AND DEVELOPMENT PROGRAM

You will receive technical assignments that give you a realistic understanding of RCA operations and opportunities. These assignments are developed to your interests and insure a comprehensive coverage of RCA engineering activities. From your very first day of training, you're a professional engineer in both status and salary. RCA's advancement programs also work in your favor, just as they do after you finally take over full professional responsibility. Design and development assignments may be in military or commercial electronics.

GRADUATE STUDY

Earn your MS in EE, ME or Physics . . . as RCA bears the full cost of tuition, fees, approved texts and materials. While on this program you carry approximately half a full academic schedule. You're eligible for all RCA benefits and merit increases. In two years or less, you'll receive your degree. You study at the University of Pennsylvania if you choose engineering work in military or commercial design and development. On an Electron Tube or Semi-conductor assignment, you attend Rutgers University.

DIRECT ASSIGNMENT

Possibly you are sure of the engineering direction you want to take. With experience and education that meet RCA's requirements, you'll find dozens of opportunities for direct assignments in many RCA engineering fields. Get the story . . . then decide.

See your placement officer about getting together with an RCA representative, and to receive detailed brochures on RCA plans for your future. If you are tied up when RCA's representative is on campus, send a resume to:

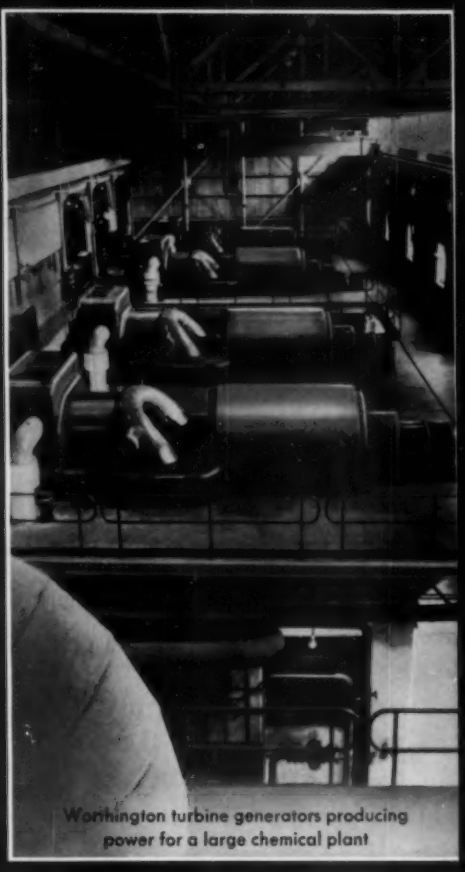
Robert Haklisch, Manager
College Relations, Dept. CR-1M
Radio Corporation of America
Camden 2, New Jersey

Tomorrow is here today
at RCA

RADIO CORPORATION of AMERICA

Worthington equipment air conditions the Beverly Hilton hotel

Be sure your grads know about


Worthington turbine generators producing power for a large chemical plant

Steam electric station equipped with Worthington condenser and pumps

WORTHINGTON

A diversified company with: 1) industry's most flexible training program; 2) stability-growth balance. Write to R. P. Hughes, Director of Training, Worthington Corporation, Harrison, N. J. 333-1

Worthington compressors supplying air for plant use

Worthington refrigeration equipment [illegible] for Army Signal Corps

- Pumps
- Compressors
- Heating, Air Conditioning and Refrigeration Equipment
- Steam Turbines
- Steam Condensers
- Air Ejectors
- Engines
- Feedwater Heaters
- Construction Equipment
- Mechanical Power Transmission Equipment
- Positioning Equipment
- Industrial Mixers
- Liquid Meters
- Electric Motors
- Generators and Controls

Originated and run by students— with plenty of advice and help from the Placement Office— Michigan State's Annual Career Carnival this year attracted some 14,000 students and 76 organizations. Important features are a banquet for the representatives (above) and the scores of attractive displays and exhibits (at the left).

Michigan State Wraps It Up With an

ANNUAL CAREER CARNIVAL

Now in its ninth year, Michigan State University's big vocational show is well established as a campus tradition. Here's the story of how it started and why its supporters think it will be around for a long time.

■"It's for you, so interview" was the theme of the Ninth Annual Career Carnival held at Michigan State University, October 7 and 8. Some seventy-six organizations from business, industry, state and federal agencies as well as education were represented at the two-day affair, with a student attendance of approximately fourteen thousand. This was the largest crowd ever to attend the event.

The Career Carnival is sponsored by the Placement Bureau of the University and is designed to give vocational information to the entire student body. Its success can be measured, Michigan State believes, by the multitude of companies who return year after year to be represented and by the interest and enthusiasm of the students who have thronged to the Carnival since its inception. It is now recognized as one of the key events of the school year at Michigan State.

Student interest and demand was, of course, the prime factor in initiating a Career Carnival at Michigan State. In 1949, Ed Pino, President of the Senior Class, approached Tom King, the present Dean of Students at the University, who was Alumni Director at that time. Pino asked if it would be possible to invite a group of employers from business and industry to the campus to talk to the seniors about job opportunities and careers in various fields.

King thought the idea feasible and due to his efforts and those of John Schlueter, Placement Director, a Senior Career Carnival was planned for the spring of 1949. They invited fifty organizations which they felt would be interested in such a program. As a result, twenty-three participated in the First Career Carnival in April of that year.

It proved successful. The representatives felt it most worthwhile to talk to the seniors and, conversely, the seniors were pleased to get first-hand information about possi-

ble careers. Plans were then made to have another Career Carnival the following year with the Placement Bureau as the sponsoring agency.

When Jack Breslin became Placement Director in 1953 an effort was made to increase and diversify the number of organizations participating. The entire student body was also invited to the Carnival to talk informally to the various representatives about job opportunities and the background and qualifications necessary for these positions. That year sixty-seven organizations from a wide variety of fields were represented and student attendance reached the ten thousand mark. The 1953 Career Carnival set the pattern for those to follow, and during the past two years close to eighty organizations have participated and between twelve and fifteen thousand students have attended annually. Due to a space limitation it has been necessary to limit the number of companies to approximately eighty.

An added feature has been the Career Carnival Banquet which is held the evening of the second day when Dr. John A. Hannah, President of Michigan State, welcomes some three hundred representatives who are on campus for the affair.

Plans for next year's Carnival are made almost before the last display has been taken down from this year's event. The dates must be determined immediately as space has to be reserved far in advance for both the Career Carnival and the Banquet. Also, there is a committee meeting at which the "pros and cons" of the last carnival are discussed with the objective of making next year's event more effective. Then, each committee member submits a written report to be used by the person assuming that job for the next year.

At the beginning of the Winter term, petitioning for the job of student chairman begins. That individual is chosen from roughly twenty candidates, by the past chairman and the Career Carnival advisor, who is a member of the Placement Bureau Staff. Then the new chairman, together with the advisor, picks the remaining committee members (Executive Secretary, Publicity, Art, Banquet, and Staging) from the many applicants who have petitioned for these posts.

By the beginning of the Spring term the student committee is set. It is during this term that the bulk of the planning for Career Carnival is done inasmuch as it is the first big event of the school year in the Fall, held approximately two weeks after registration. Choosing the theme and colors are the first main items. Then designing and printing of programs, posters, and tickets comes next, along with plans for the banquet, which includes selecting a menu, arranging entertainment, and obtaining speakers. Screening the organizations to be represented is next as the invitations go out in June. Publicity plans which include slides for TV, electrical signs, wooden signs, radio and newspaper coverage must be handled as well as new ideas for publicity.

At the beginning of the Fall term displays from the various organizations are shipped to the campus and stored until the day prior to Career Carnival. Then the boxed displays are brought to the Union Building where the event is held and put in the space alloted for the particular companies. Plenty of student help is available to aid the representatives in setting up and taking down exhibits which are often quite elaborate. Staging is a big job since the displays are put up in one day and must be ready for the opening which is 6:30 in the evening. Also, they must be taken down, boxed, and shipped the day after the Carnival, all of which involves a great deal of planning.

The displays are designed to attract the students' attention and may show products manufactured by that particular company, location of various plants, type of training program, degrees sought, etc. The students wander among the displays and chat informally with company representatives about possible careers with that company or in that field. The show is geared primarily for the college students, although some members of the local high school senior class have been permitted to attend the morning session. Many staff and faculty people also come in to acquaint themselves with the procedure.

The student committees are credited with having done a wonderful job over the years in handling the many details that arise in putting on a show and have come up with many new and constructive ideas. Interestingly enough many of the committee people who have graduated and gone into business have returned to the campus to represent their organizations at the Carnival.

The Placement Bureau is proud of the success of this vocational affair and grateful to those of business and industry who have attended annually.

The Annual Career Carnival has been just one of the many ways of carrying out the responsibility for vocational information at Michigan State University. Its success can be attributed to the close cooperation that has existed between the organizations which participated, the student committees, and the administration of the university.

A MATTER OF RECOGNITION

Because of the welter of organizations active in the field of college placement and recruitment, it is becoming increasingly important to recognize the one official, non-profit organization representing college placement officers and the recruiters.

It is the COLLEGE PLACEMENT COUNCIL, INC., known by its seal and the initials CPC which appear on this JOURNAL, the stationery of the Council, and the annual occupational directory, The COLLEGE PLACEMENT ANNUAL.

To be sure of the endorsement of questionnaires, communications, and new projects in the placement field, look for the CPC seal.

HOW MANY OF YOUR SENIORS

FEEL LIKE THIS?

Basking in that great feeling that comes after deciding upon a career—and being picked for special training by the company of their choice.

Our booklet, "OPPORTUNITIES for TRAINEES with the Royal-Globe Insurance Group," may help some of them to make up their minds.

Royal-Globe Insurance Group
C. A. Denneen, Personnel Mgr.
150 William Street
New York 38, N. Y.

Please send me *"Opportunities for Trainees"*

Name .....

Address .....

.....

THE CLIMATE FOR PLACEMENT

Continued from page seventy-four

point in his life. The interview can, therefore, be a place for guidance and counsel, as well as appraisal and evaluation.

I want to stress the importance to the employer of identifying, possibly with placement's help, some of the basic things which all of us want in the graduates we hire. Scholastic record is one means of gauging how well an individual can apply himself and we are, therefore, concerned with it. We will look for clarity of thinking on the part of the student, as evidence that he will approach new projects with a spirit of inquiry and a willingness to tackle problems which his college program never anticipated. We want people with cultivated habits of thinking which will enable them to seek out unsolved problems and to systematically explore and solve and, where possible, add to our store of useful knowledge. We hope that the qualities of initiative and responsibility have been encouraged while in the college environment and that we can identify these during our interview. We hope the colleges have encouraged attitudes of cooperation with their associates, because much of their working life will be spent in working with or for people. We hope that flexibility and versatility have been encouraged so that they will be prepared to adjust to people, and situations, and to the changing complexity of our society.

Let's look at it this way—with hundreds or even thousands of students graduating from our institutions and the hundreds of employers, it is obvious that the students can't interview all the possibilities, nor can the employer interview all the students in whom he might conceivably have an interest. The placement officer's role is that of guidance and of narrowing the initial selection by field of interest, by geography, by preference, and by indicating the degree of risk which several courses of action may produce. Decisions on a lifework, just as decisions on marriage, are a gamble. The better the understanding and the guidance available, the less the gamble.

Employers have both an opportunity and a responsibility to establish ethical standards as they deal with the placement office and, in turn, with the student. Whether the student plans to enter one of the professions, including education, or the field of business, or almost any other conceivable endeavor, he is launching a career. This career will have to be guided by ethical principles, whether they are identified as an official professional attitude or not. The surveys which have been made of college recruiting performance emphasize over and over again the importance to the student of the interviewer's attitudes and personality. We, in the employer category, should do everything we can to see that an impression of proper ethical standards is left with the student during each interview. This is one of the first places where we have the opportunity to influence our next generation in terms of high-level professional attitudes.

I do not propose to review the various codes of ethics which have been, or are, under consideration by many different groups. One observation, however, might be in order. We have been in a period where competition for manpower, especially in the technical area, has been particularly keen among employers. I suppose it was inevitable that, as codes were considered and developed, the subjects were directed to a large degree at employer practices and the most rigorous standards and the burdens of enforcement were placed on the employer. I do not object to this, but suggest that the college also has responsibilities in these procedural matters, and that they should take their share.

As those in placement look at the growing number of students who will be crowding the gates in the years to come, they must instinctively turn toward some of our newer developments to see how these can help in dealing with their problems. In attempting to meet this increase with its office complications, one can't help but think of automation as it can affect the placement field. I'm sure it holds some potential and there are already punch-card systems which are providing real assistance in the record-keeping phase. It can certainly help many of our clerical difficulties, but at this stage I would caution against placing too great a share of our expectations on this to solve all our problems.

I'm sure that some form of mechanized system can help narrow the field in which the student and the employer should look for mutual interests or work or talents. I foresee one real obstacle; namely, that in spite of all the guidance which can be given, the student doesn't know enough of the complicated world of employment to clearly define and describe the job for which he is really best suited. Some may feel that psychological or aptitude tests will fill this void. Others may think that plant visits and testing will help automate the placement function. Our young people can look forward to a most interesting twenty-five years ahead as attempts are made to carry this out. My own observation is that companies have a personality just as people have, and that there is an intangible matching process which is not readily catalogued except through the face-to-face discussion which the interview provides. Evaluation and selection, in the end, must be a personal and individual decision.

The assistance given to the placing of graduate students varies between schools and also between

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disciplines and degrees. A large proportion of M.S. candidates now work through the placement offices, but in the case of most doctoral candidates, the relations are often directly from employer to the graduate school professor and the graduate student. There are many reasons for this, the most obvious of which is that the numbers are small and the professors of Ph.D. candidates feel a very strong sense of responsibility and interest in the placing of each individual.

The question is sometimes asked as to how the relations between college and employer are affected by this mechanism of placing doctoral candidates and whether a change would be possible. Basically this is a matter which must be settled within the college and between the professors supervising graduate work and the placement office. My personal view as an industry representative is that if the placement director provided this additional service, and encouraged close liaison between employer and professor; then the system would work and the graduate student would, perhaps, benefit by a somewhat wider range of employment opportunities. On the other hand, if a placement director maintained a rigid, third-party barrier, this would have many drawbacks to industry, and probably would be very difficult for the professors involved to accept. The solution to this problem will require good judgment and careful consideration of the merits of relative services being performed under the two systems, in order to work it out satisfactorily.

Is prestige a matter of title or public recognition, or just what? From time to time, we have all heard discussions as to whether the placement director has, or will soon assume, professional status. My own view is that talking to each other at meetings like this and passing rules in conventions does not, of itself, lead to professional recognition. Professional status, basically, results from public recognition of specialized training, specific responsibility to the public, and the performing of a recognized service in an impartial and unbiased manner.

No matter what our field of work, we are all on firmer ground if we are providing a service generally needed in our social structure. Some of the relationship matters which we have been discussing provide some suggestions as to how a placement director could structure his work to augment this aspect of his job, and to increase the service to his own faculty and staff, the students, and the visiting employer.

Interest Shared By Faculty

To illustrate, faculty does want to be relieved of many of the clerical and minor problems which are ably handled in placement work, but they also are, and should be, interested in what happens to their students upon graduation. Placement is, therefore, to some degree a responsibility of the faculty as well as the placement officer. Many do an excellent job of cultivating these faculty relationships, so that they are used when they can be effective and they are shielded when their work might be interfered with. Everything the placement officer can do to improve the over-all effectiveness of the education and the placement of the graduates will, in some degree, benefit his own work and improve his status.

As he acquires experience and improved working relations with employers, he can serve the students and his college in a manner which again enlarges his job responsibility. This comes about when he has some understanding of the type of work available in the various companies and can give sound advice to the students. It occurs when he can deal impartially with both small and large companies and cite fairly the advantages of each, rather than making blanket generalizations. This comes about when he expands his counseling service to students, so that he has in his system improved records and material which will help each to find the work for which he is best suited.

He will be enlarging his job concept when he utilizes his relations with the employer and with specific industry to understand their needs of educated people and to convey this back to his own administrative and teaching staff. He is performing a service when he makes records of where his graduates go and, what is more important, provides a follow-up on their performance in their chosen work. Some feed-back occurs now, which helps education evaluate its college product. There is room for much more of this.

He is enlarging his job when he cooperates with his public relations office and his alumni secretary because both are interested in the positions held by their graduates, and in most cases, in the broad college relationships with the employers themselves. All of this is best performed in a spirit of mutual confidence which is a result, first, of rather clear job descriptions, and then of personal cooperation with other college personnel.

I have wondered now and again how much long-range planning has gone into the thinking about the actual work of the placement director. Perhaps this is all done and I am just not aware of it. It does suggest, however, that some of the techniques of operations research may be applicable.

We spent a substantial amount of effort this last summer looking at our own work in the field of college recruiting. We projected our thinking ten years into the future and tried to appraise the number of graduates who would be available as against our needs, and to determine what our jobs will be like as the numbers involved continue to grow. In doing this, we had to examine what we are now doing and how we spend our time to accomplish this. As we were doing this, we found that a re-allocation of our effort may very well be desirable. This thinking can't help but anticipate future problems and start us evolving plans with which to face them.

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range thinking could do in this field of placement.

Why interview on the campus at all? What is the magnitude of the job itself; that is, how many people and how many companies will be involved in office procedures next year or ten years ahead? Is the job basically that of counseling the students, or testing and screening them, or is it that of appraising them for the benefit of the employers? What are the relative obligations of the placement office to the three things under discussion today; namely, students, faculty, and employers? What relations should be had with them? What kind of person is needed to fill this type of job? What professional training is needed in order to undertake placement work?

After some of these things have been answered, one might ask how a placement director should spend his time. What financial support is necessary to really do the job, and how should he distribute his budget between the various parts of his work? This effort might be allocated in different ways until the best balance is established in terms of the objectives set for the several groups being served.

Such a program should clearly distinguish between the short-range objectives of our transient manpower problem as compared to the expected placement situation over the years ahead. It would have to clearly establish the importance to our whole economy of guiding students toward the work where they would most successfully utilize their education and their innate abilities. I see in this an important challenge.

In the beginning we have thought about each placement officer clearly defining his own job. In closing, we might consider the advantages of having a long-range plan. This is a lot of work, but, if done in relation to others in college and industry, it should be worth it. It is one of the ways by which one can step outside immediate problems and look at them with breadth and vision. Perhaps it will be seen that the problems are actually opportunities.

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WITH THE REGIONAL ASSOCIATIONS

Continued from page seventy

able to individual students." She suggested that MAPOA could take a hand in developing vocational information of a more specific nature than is now available and she pointed out that it should include details as to the nature and range of the more common jobs as well as the more unusual jobs. Mrs. Wyatt also felt that MAPOA was in a position to conduct a student follow-up, without too much disruption to industry, which would provide valuable information not only to the colleges directly concerned, but also to other colleges and even to industries.

George N. P. Leetch, Director of Placement, Pennsylvania State University, stated that, through the placement associations, a bridge had been built between education and industry. There should now be more exchange of information and ideas for long-range planning, and a lessening of emphasis on current manpower needs.

Raymond K. Irwin, Director of Placement, Bucknell University, using the MAPOA placement aim —"To integrate the placement service into the total program of the institution and facilitate sound faculty relations . . .," indicated that a closer working relationship among the placement office, faculty, and administration could be established within the colleges in regard to curriculum, scholarship, student aid, and admissions, as well as on other long-range projects.

The Industrial meeting "What Industry Expects of the College Placement Office" was led by W. R. Wilson, Jr., of the Pittsburgh Plate Glass Co. The group covered three topics, the first of which was "The Placement Officers' Relationship with the Students." The group expressed the need for more emphasis on the counseling aspect rather than the present stress on office mechanics. The placement office should become the coordination point of university responsibility for all student counseling, and should utilize tests, faculty, and retired industrial representatives. The student should receive counseling early so that he may have mature judgment with regard to his career.

In the second topic, "The Relationship of the Placement Officer to the University Administration and Faculty," the importance of a centralized placement office for contacts between industry and the school was stressed. The office should keep the administration and faculty informed of career trends and handle industries' faculty contacts on campus. A plan which is in use in some schools was suggested whereby individual faculty members would become authorities on particular companies.

Thirdly, the group talked about "The Placement Office Mechanics." The need for a single "pre-visit" check list which would be acceptable to all placement officers and to industries was emphasized.

"What the College Placement Office Expects of Industry" was the subject of the College section which was headed by J. Lyon Rogers of the Johns Hopkins University and D. M. Cook of the Pennsylvania State University. The discussion was divided into two broad headings, the first one being "Know the College or University."

Emphasis was placed upon the importance of coordination of the recruiting program which includes centralizing contacts, eliminating duplication of effort and confusion by all concerned, and providing adequate information for placement officers to arrange schedules. There is also the keeping alive of the communications channels with follow-up information for placement officers and students, providing literature for students at the appropriate time, and keeping abreast of the academic programs of the college and universities.

Under the second heading, "Industrial Planning," the main points were the importance of using well-trained recruiters in order to attract quality rather than quantity and keeping the placement officer informed of current manpower requirements. Other important requirements were giving more thought to the college visitation, scheduling numbers of schools in proportion to needs, keeping placement officers informed of long-range plans to aid them in counseling students, and studying the present manpower for the purpose of preparing a program to fully utilize college graduates.

An address by John A. Mayer, Executive Vice President of the Mellon National Bank, was entitled "Opportunities for the College Graduate in Commercial Banking." Mr. Mayer pointed out that, although banks do not have the glamour of other industries or the rapid change by which newcomers are attracted, their employees are in contact and must be acquainted with diversified activities. Because of this diversity they find it easy to make the transition to other fields of work if they are not satisfied with banking. He pointed out, however, that turnover in banking is very low. Actual salaries of a number of men were given to illustrate the lack of truth in the common belief that banking is not financially rewarding. Employees today stand an excellent chance for advancement because of the growth of banks and the influence on recruiting of the depression years.

The conference closed with the presentation of the new officers: President, Paul Sherwood, Placement Director, University of Pittsburgh; Vice President, J. Lyon Rogers, Director of Placement, Johns Hopkins University; Secretary-Treasurer, Miss Cornelia Ladwig, Placement Advisor, West Virginia University; Board Members, Mrs. Viola Saltmarsh, Tufts College;

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Joseph D. Pascucci, St. Joseph's College; Harold H. Fee, Stevens Institute of Technology (two past members, David Mader, Rutgers University, and Robert MacDonald, University of Pennsylvania, complete the board); Industrial Advisor, Richard L. Gaugler, Aluminum Company of America (Arthur Kneen, General Motors Corp., is still serving as the other Advisor).

Robert Haklisch, Manager of College Relations, Victor Division of the Radio Corporation of America, was selected as the MAPOA Industrial Representative on the College Placement Council. He will serve on the Council until 1959.

Reports on "Pre-Visit" Sheet

Robert MacDonald, Acting Director of Placement from the University of Pennsylvania, reported on his efforts to compile a standardized "pre-visit" check sheet for colleges to use to obtain information from the companies concerning their campus interviews. Because of the wide variety of such sheets in existence, it appeared that a form satisfactory for all colleges would be difficult to develop. The Executive Board recommended that further study be done on the matter.

J. Lyon Rogers, Jr., Director of Placement from Johns Hopkins University, presented a standardized interview form which the Association approved. This blank, to be completed by the students for the use of the recruiter during his campus visit will supplant company application blanks and data sheets now in use in the colleges. It was agreed that minor revisions could be made so that it would be adaptable to the individual colleges.

The Fall Conference for 1958 was discussed and the original plans were altered. It was suggested that the meeting be held the latter part of October, rather than in September, so that those college placement officers who have other duties might attend. The Association expressed a desire to return to the Pocono Manor Inn, October 21-23, 1958.

EASTERN COLLEGE CONFERENCE

The theme of the 1957 annual conference of the Eastern College Personnel Officers, held at Poland Spring, Maine, was "Development for Leadership."

In a thoroughly provocative keynote address, Mr. Schuyler Hoslett, Vice President of the Reuben H. Donnelley Corporation, gave an emphatic "no" to the question, "Can Leadership be Developed?"

Hoslett, like Peter Drucker, believes that preparation for leadership is simply "lifting man's vision to higher sights and his performance to higher levels; and building his personality beyond its normal limitations." The best that can be done for any man, says Hoslett, is to provide the conditions conducive to this kind of growth. Hoslett insists that becoming ever more competent in the present job is the most important kind of training possible for a future job.

Interest in self-development is really what determines the direction of individual growth—self-development in areas of general knowledge, attitude—the changing of attitude to one of flexibility and understanding, intelligence, and the development of skills—including such skills as how to run a meeting.

The speaker warned that there is "nothing more discouraging than personnel with potential in an organization which does not allow them to develop that potential."

Everett Teal, former president of the College Placement Council, speaking briefly at a luncheon meeting made a plea to placement officers to "jack up their standards and services" to enable them to operate more effectively in a "changing supply-demand situation." Teal predicted that as supplies of college graduates increase, only those colleges will be visited which offer the most outstanding placement services.

Alice Davis, new president of ECPO, in a panel on "Education's Responsibility in Developing Leadership," reminded placement officers that the right kind of placement officer with the right kind of influence is essential to individual counseling; and that the wrong kind is disastrous.

Everett Stephens, ECPO's representative to the College Placement Council, in his annual report to his Association expressed the belief that while the advertisements, for the most part, in the 1958 College Placement Annual are arrestingly impressive, they miss the audience they are beamed at—namely, the college seniors. Stephens reported that in a sampling of both students and placement officers the opinion was expressed that more companies might well pattern their advertising after such ads as New York Life and Procter and Gamble. In these ads the college senior finds the kind of vocational information for which he is searching, which in turn leads him to investigate these companies. High pressure sales ads have no place in sound vocational counseling.

Panel Subjects Are Varied

A variety of topics was discussed in the panel sessions, including such subjects as vocational "exit testing;" the need for the student's developing sharper vocational insights as part of a well-rounded college career; the need for a far greater abundance of industrial occupational information, sponsored possibly by various industries and trade organizations. Fear of over-mechanization and neglect of the individual was also given attention.

Dr. Arthur A. Hauck, president of the University of Maine, underscored the philosophy that "the function of college is to help students realize their potentialities, not to prepare them for jobs." He warned of the accelerating psychological hazards of our civilization: boredom with routine jobs, inability to relax, disappointment over failure to get promotions. It is Dr. Hauck's belief that one of the chief goals of college is to help the student achieve freedom under pressure.

At the annual business meeting of the association, the new code of ethics, Principles and Practices of

(*Continued on page 110*)

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Many young graduate engineers aren't sure of the phase of engineering for which they are suited. Allis-Chalmers offers these men an excellent opportunity for choice

THE Allis-Chalmers training course for graduate engineers, started in 1904, gives each individual a chance to find the type of work he likes best. Over 90 training stations are available with expert guidance when he wants it.

Because of Allis-Chalmers activity in such industries as electric power, ore processing, earth moving, agriculture and nuclear energy, A-C offers openings in many fields, such as:

Research, design manufacturing, application

- Thermodynamics
- System Analysis (Electrical and mechanical)
- Stress Analysis
- Hydraulics
- Electronics
- Process Engineering
- Metallurgy
- Nucleonics
- High Voltage Phenomena
- Analogue and Digital Computers
- Fluid Dynamics

The Allis-Chalmers training program offers up to two years of theoretical and practical training. Most of the A-C management group are graduates of this course.

We believe your young engineers will benefit from talking over the training program with an Allis-Chalmers representative when he visits your campus.

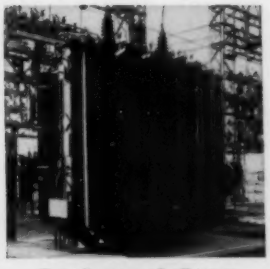
If you have any questions, contact Allis-Chalmers, Graduate Training Section, Milwaukee 1, Wisconsin.

ALLIS-CHALMERS

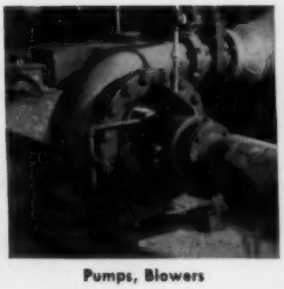
A-C ALLIS-CHALMERS

A-5393

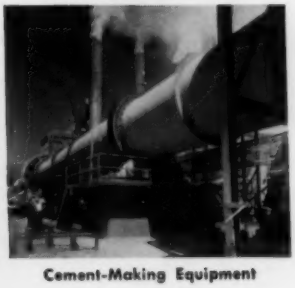
Steam Turbines



Transformers of all types



Pumps, Blowers



Cement-Making Equipment

College Recruiting, was ratified. The new officers elected for the term 1957-58 are:

Miss Alice Davis, Smith College, President; John Butler, Trinity College, First Vice President; Mrs. Hope Brothers, Brown University, Second Vice President; Miss Betsy James, Skidmore College, Secretary; and Pennell N. Aborn, Virginia Drew Guidance Center, Treasurer.

ROCKY MT. CONFERENCE

The conference opened at 9:00 a.m. Friday, October 25. After being welcomed by President Partlo of the South Dakota School of Mines and Technology and President Willard Edwards of the Association, the morning meeting was devoted to a discussion of the topic "Loss of College Faculty to other Employment." Dr. W. F. Dyde, Mr. C. C. LaVene and Dr. Thomas L. Clifford addressed the group on phases of this subject and later small groups formed to discuss specific problems and report back to the general meeting.

There is great concern about the problem of providing faculty for the volume of students expected in the coming years. We have a tremendous problem to find enough qualified people to train the students who need to be trained to do the job that must be done in our country. Engineering is the toughest spot. The young engineer is sought for industrial employment but not for college employment because he has not been considered ready for it.

The profession of teaching is a dedicated service. The basic reason for the loss of teachers to industry is the need, but virtually every product of industry is directly dependent upon or related to technological progress, which in turn is absolutely dependent upon schools of higher learning. Science has become a vital part of our culture and society and schools must maintain high standards of quality in their teaching staffs.

Loss of faculty to other employment is due primarily to the research attraction not requiring teaching, teaching out of their field of immediate interest, and to the salary differentials in the teaching profession and industry.

Industry and colleges must cooperate more fully to bring greater recognition to teaching, to make it more attractive, to help the colleges retain their superior teachers and interest more outstanding young graduates in making teaching a career. More scholarships and fellowships are essential—there should be greater exchange of professors and industry people, there should be more recognition for faculty members at the beginning level.

The Friday luncheon session followed the same general plan as the morning session on the subject "On-Campus-Interviews." Mr. Don Howe presided and Dr. J. P. Colbert, Mr. R. C. Walther, Mr. R. Y. Chapman and Mr. Martin J. Burns were the speakers.

On-Campus-Interviews give industry a chance to look at prospective employees and help the college to serve the student.

The Bell System recommends team recruiting because it allows explanation of all company opportunities at one time, team counseling, one interview schedule for the college, and a chance to pool judgment on the men interviewed and effective coordination.

Good interviewing must embody honesty, sincerity, and frankness on the part of the recruiter.

Federal Civil Service has great need for better quality intake as fifty thousand out of every two million will be let out of government service. Under the Federal Civil Service Examination, application for permanent employment may be filed upon entrance into the junior year. The Federal-Service Examination will eliminate the oral interview and the impersonal quality of government recruiting will be changed. In two years 188,000 have applied for the examination, 107,000 took the examination, 51,000 passed and 10,000 have been employed from the 51,000 on the register.

The dinner was held at Mount Rushmore. Ranger Applegate gave a brief history of Mount Rushmore. After dinner speakers with President Willard Edwards presiding were: Mr. Robert Herrick, Editor, College Placement Council, Mr. Herald Carlston, and Mr. Judson Ford.

Motion was carried that a travel budget of $300.00 be set up for the President and one college representative to attend meetings and this amount is to be budgeted between the two representatives according to need.

A discussion of dues was held and it was decided that there would be no restriction on membership numbers from an institution or firm. A motion was carried that $10.00 would be charged for the registration fee with adjustments made by the convention committee as needed. Meal tickets would be taken care of in addition to the registration fee and no refunds made after registration for the meeting.

After a discussion of the report of the budget committee, a motion was carried that $50.00 be earmarked for research.

Motions were made and carried that the 1958 meeting be held in Omaha and the 1959 meeting in Albuquerque, the time of the meetings to be set by the Executive Committee.

Nominating Report Accepted

The report of the nominating committee was unanimously accepted as follows:

President, Warren E. Lee, Director, General Placement Bureau, University of New Mexico, Albuquerque, New Mexico; Vice-President, M. Helen Carpenter, Director, University Placement Bureau, University of Colorado, Boulder, Colorado; Secretary-Treasurer, Dr. R. W. Schlicht, Director of Placement Bureau, Augustana College, Sioux Falls, South Dakota; Representative to College Placement Council, B. Keith Duffin, Director of Placement, Brigham Young University, Provo, Utah.

A motion was carried that "Prin-

These five young engineers have been moving in that direction since they came to Columbia Gas System

Thomas P. Peyton, ME, Purdue '46—employed as engineer trainee, four promotions, now Gas Estimating Engineer.

Wm. F. Redd, ME, Ohio State '47—employed as engineer trainee, four promotions, now Dist. Supt. of Distribution.

John Y. Neal, CE, V.M.I. '53—employed as engineer trainee, two promotions, now Staff Engineer.*

Earl G. Flower, PE, U. of Pittsburgh '49—employed as engineer trainee, three promotions, now Staff Engineer.

Jack G. Brown, EE, Vanderbilt '53—employed as engineer trainee, three promotions, now Corrosion Engineer.

Each occupies a position where he can still grow with one of the nation's largest natural gas utilities. Their steady advancement is typical of that experienced by college and university graduates with Columbia Gas System.

For information about a career with Columbia Gas System, contact your placement office or write to the Director of Employee Relations in the Group Company in which you are interested.

*Recently returned from two year military leave of absence.

COLUMBIA GAS SYSTEM

THE COLUMBIA Gas SYSTEM, INC.

COLUMBIA GAS SYSTEM SERVICE CORPORATION
120 East 41st Street, New York 17, N. Y.

CHARLESTON GROUP: *United Fuel Gas Company, 1700 MacCorkle Avenue, S.E., Charleston, West Virginia.*
COLUMBUS GROUP: *The Ohio Fuel Gas Company, 99 North Front St., Columbus 15, Ohio.*
PITTSBURGH GROUP: *The Manufacturers Light and Heat Company, 800 Union Trust Bldg., Pittsburgh 19, Pa.*

ciples and Practices of College Recruiting" be approved.

Industrial representatives joined the meeting and also indicated approval of the Code of Ethics.

The following suggestions were made by them: The ANNUAL or JOURNAL should outline what is expected of a graduate by industry; the annual meeting should be held between the middle of September and middle of October and Saturdays be eliminated as meeting days; students should be encouraged to file qualifications with placement offices and placement officers should follow company specifications and permit only one student per interview period.

Brian Finley was selected by the associate members to represent them on the College Placement Council and E. A. Briggs was the alternate.

Willard Edwards was elected to fill the vacancy on the Executive Committee.

Warren Lee, newly-elected president, presided at the luncheon meeting. The speakers were Mr. J. T. Jones, Mr. Brian Finley, Miss M. Helen Carpenter. "Termination During First Two Years—Prevention and Replacement" was discussed. Companies can encourage membership and participation in professional and scientific organizations and give financial assistance for advanced education.

Companies should be realistic in their approach to new employees and make them feel they are a part of the organization, let them know how they are doing and periodically advise them. They should pay attention to the progress of the individual and advise him of the ways in which he can improve. Counsel those who are leaving in an attempt to discover the real reason for leaving and if the employer is deficient, attempt to correct the fault. Employers should look around at their physical plant, look around to see why these people are leaving. Don't treat the new employee as a statistic. After he is on the job the schools should not contact alumni but let the alumni contact the school for placement service.

WESTERN CONFERENCE
January 23 - 24, 1958

The Western College Placement Association is holding its 8th Annual Conference at the Multnomah Hotel in Portland, Oregon, January 23 and 24, 1958. President Walter W. Bristol, Placement Director, The State College of Washington, Pullman, Washington, announced that the theme of the conference was to be "Today's Recruiting and Placement Practices — Substance and Shadow" and that over 300 delegates from colleges and industry in the eleven Western States were expected to attend.

At the conference prominent and well-informed speakers will address themselves to problems and subjects of interest to university placement directors and industrial recruiters.

Power and Performance by the Younger Generation . . .

You are now coming of age in the engineering profession. At the same time, the art of generating electric power from nuclear energy also is coming of age, opening up a vast new field of carrer opportunities for young engineers.

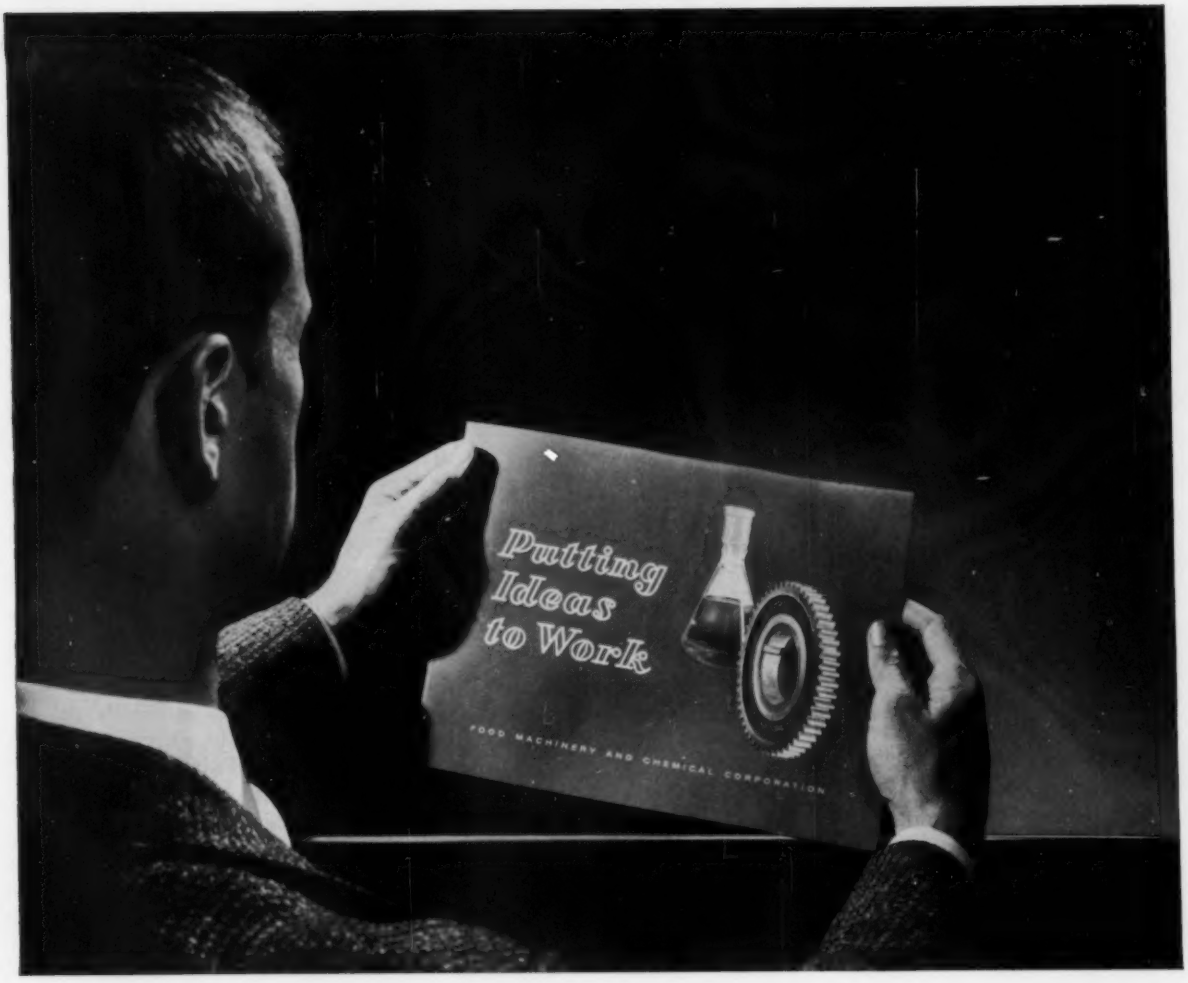
The Georgia Power Company is one of several electric utilities conducting research in atomic power. Already it is participating in the construction of an experimental atomic power plant. The Company is providing its engineers graduate training in nuclear reactor engineering in preparation for the time when commercial atomic power plants will be built in Georgia.

A career with the Georgia Power Company affords engineering graduates unlimited opportunity for the development and utilization of their aptitudes and skills.

For further information, write to:

INDUSTRIAL RELATIONS DEPARTMENT

GEORGIA POWER COMPANY **ATLANTA, GEORGIA**



A REAL CAREER OPPORTUNITY FOR GRADUATES —in Engineering or Chemistry

Graduates planning careers in chemical, electrical, or mechanical engineering, will be interested in evaluating the opportunities offered by Food Machinery and Chemical Corporation —a nation-wide organization that puts ideas to work through creative research and practical engineering.

To acquaint students with the broad scope of career opportunities in FMC's diversified activities, we invite you to write for copies of our brochure, *"Putting Ideas to Work,"* which graphically presents FMC's operations and product lines.

Address: Industrial Relations Department
P. O. Box 760, San Jose, California
or 161 East 42nd Street, New York 17, New York.

FMC offers career opportunities in these fields:

Agricultural Chemicals — Agricultural Equipment — Automotive Servicing Equipment — Food Canning & Freezing Equipment—Defense Materiel—Fire Fighting Equipment—Industrial Chemicals—Materials Handling Equipment—Power Gardening Equipment — Packaging Equipment — Food Packing and Processing Equipment—Petroleum Specialty Equipment—Pumps and Water Systems—Waste Disposal Equipment.

FOOD MACHINERY AND CHEMICAL CORPORATION

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FOOD MACHINERY AND CHEMICAL CORPORATION

COMMENTS FROM THE 50-YD. LINE

Continued from page sixty

portance of a score and translate other less tangible bits of evidence in terms of this score.

Many tests in use today are as short as eight minutes. This is certainly expecting much from little. It is well to remember that in addition to seeking personnel, you are also influencing the lives of people, and therefore have some responsibility for honest appraisals. Our quarterbacks guess that it will be a long time before tests will be a substitute for properly used interview techniques.

Other trivial practices worthy of mention are these: showing indecision as to military-bound candidates; requiring all candidates to complete long company application blanks even though complete credentials are available; upping starting salaries, usually under cover, for some and not others; pressuring candidates for an immediate decision; lack of promptness in keeping appointments and in follow-ups.

Interview time could be used to much greater advantage if more adequate written information for the use of potential employees were available. Hand-out material prepared for recruiting purposes is replete with statements which extol the virtues of the company, while relatively little space is devoted to descriptive material about the work available. To read many of these literary masterpieces is to leave one slightly bewildered because it would seem that each company is the "fastest growing," "the largest," "the most dynamic."

The space which *is* devoted to employment possibilities is often too general to be of use to the engineer looking for job information. The following statement will illustrate just how specific some company brochures are on this subject: "We are choosy about whom we hire. We want the right man in every job, men we feel certain will fit well into our organization, working well with others or by themselves as the need requires."

There are some companies who *do* go a step further by using job titles to convey information about work to be done. Titles are useful only to the extent that they are defined, since their meaning varies from company to company. For example: an industrial relations job in one plant may call for an engineer to do efficiency work, and in another plant may call for a non-technical man to do labor relations.

Perhaps companies have deluded themselves into believing that the average applicant is both incapable of decision and disinterested in actualities of work when they place prime emphasis on the fact that the organization offers such varied jobs and that the training programs will develop interest in something on the part of any person lucky enough to be hired. If such is the case, and if companies feel that it is unnecessary for an applicant to have made any decision prior to signing in for work, it seems paradoxical that an applicant, who, on being asked what he would like to do, and answering that he would like a good training program, is considered with more than a little skepticism.

If students graduating from the colleges and universities, and even experienced engineers, are to be educated about the complexities of modern industrial organizations, it would seem that skull practice should be more adequate. Companies would do well to quit trying to lure the applicant on the basis of "fastest growing," "dynamic," etc., and have their brochure writers concentrate on the more difficult, but most important, job information sections.

An article appeared some months ago in the *Saturday Review* entitled "What is an Engineer," and written by M. de Milt Aird, who claims to be a personnel man of about twenty years experience. "During the last four years," says the author, "I have worked with engineers who were assigned as project business managers, labor coordinators, sales representatives, employment office interviewers, and recruiters. Even more fantastic, I have seen a chemical engineer made responsible for scheduling work of janitors, obtaining their supplies, and changing bulletin boards.

"Who profits from this waste of talent, time, and money?

"Not the engineer, who may gain higher pay but is going nowhere professionally. Not the corporations, who are risking their future good names. (The aircraft companies recognize this and are beginning to act.) And clearly not our democratic society, which cannot afford to lose the countless hours of experience and educational potential for engineers capable of future research and development work."

This Monday morning quarterback restates:

1. The policy makers should recognize the importance of the recruiting and hiring function.

2. A coordinated, company-wide program should be established, based on sound procedure and providing for continuity.

3. Jealousy of the centralized function and suspicions among plants should not be allowed to interfere with the recruiting program.

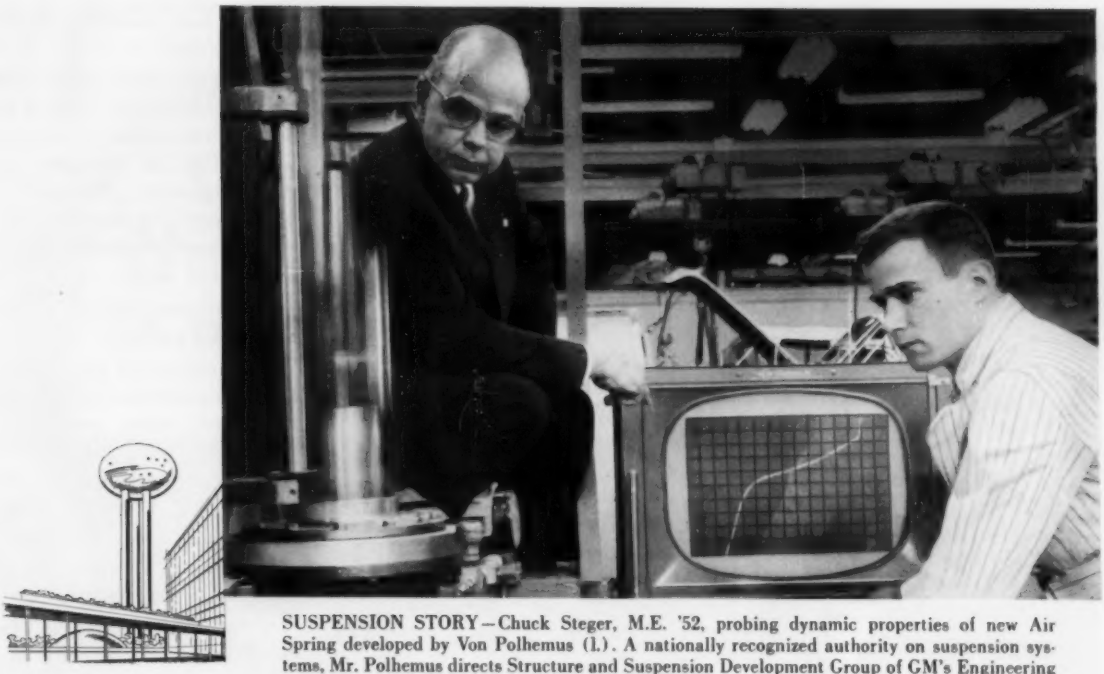
4. Only persons properly trained and temperamentally suited should take major roles in the screening and hiring functions.

5. Unethical recruiting practices should not be condoned.

6. Job needs should be clearly understood so that recruiters do not need to resort to vague generalizations.

7. Adequate written job information should be made available.

8. Testing programs should be re-examined and used with extreme caution.



SUSPENSION STORY—Chuck Steger, M.E. '52, probing dynamic properties of new Air Spring developed by Von Polhemus (L). A nationally recognized authority on suspension systems, Mr. Polhemus directs Structure and Suspension Development Group of GM's Engineering Staff, helps guide Chuck in his professional career.

Because *engineering* is a *profession* at GM —we offer your students a career—not a job

ONE REASON engineering standards at General Motors are so high is that General Motors recognizes engineering as a profession. And the men who engineer the many different products made by GM are respected for the profession they practice.

That is why, when your students are invited to join GM as engineers, they don't simply take a job—they start a career.

It is a career that is rewarding both professionally and financially—starting on their first day of association with GM at any one of its *35 divisions and 126 plants in 71 cities and 19 states.*

During their early days at GM, for example, each works with a senior engineer who guides his career along professional lines.

They are also actively encouraged to pursue their education towards an advanced degree. For we at General Motors recognize that, in doing so, they will become more valuable to us and the engineering profession.

They are given the opportunity to obtain professional recognition through participation in engineering society forums, presentation of technical papers, winning of patents and other recognition of their accomplishments.

And they are also encouraged to take an active role in their community's affairs—because a truly professional man is a good citizen as well as a good engineer.

All this is for a reason—and a good one.

Many of the men who will fill the key positions at GM in the future are the young engineers joining GM today. This is not theory, it is fact. For 14 of our 33 Vice-Presidents are engineers, 23 of our 42 Division General Managers are engineers, too.

Today we are looking for young engineers who may fill these positions tomorrow. The rewards—both professional and financial—are substantial. If you feel some of your students have the ability, have them write us. It could be the most important letter of their lives.

• • •

GM positions now available in these fields:

MECHANICAL ENGINEERING • ELECTRICAL ENGINEERING
INDUSTRIAL ENGINEERING • METALLURGICAL ENGINEERING
AERONAUTICAL ENGINEERING • CHEMICAL ENGINEERING
CERAMIC ENGINEERING • MATHEMATICS • INDUSTRIAL DESIGN
PHYSICS • CHEMISTRY

GENERAL MOTORS CORPORATION

Personnel Staff, Detroit 2, Michigan

DOW WRITES THE TICKET

Continued from page forty-eight

supervisor. If no file exists, she starts one. In that case, basic information about the applicant is "key punched" in the office on the duplicate cards for computing and for the indices.

The placement supervisor studies the application and notes his decision on an action card, which is subsequently punched and presented to the computer. (Using the card saves note writing, posting, and filing time). New action cards are made out for each step in the hiring operation and are collated for computing use with the entire deck of action cards in file number order.

Most of the applications require reply. With a glance at the action card, the supervisor's secretary punches an appropriate selection for a standard letter on one of two machines that types 130 words per minute. She need add only the applicant's name and address on the letter and the supervisor's name.

"If three or four hundred applications come in a day, we can handle them," Dr. Clack says. "We think prompt reply is important. Our automatic typewriters enable us to meet peak loads without sacrificing the required flexibility in our letters. Personal relations come into play when applicants pay us a visit."

New Equipment Paved the Way

Getting letters out fast had created a logjam in the early stages of Dow's rapid expansion. Technical Employment was "borrowing" secretarial help all over the 3,000 acre headquarters plant. Last Fall an advertisement of semi-automatic letter writing equipment caught Dow's eye and the present letter-answering system resulted.

The equipment works like a player piano. It allows random choice not only of 30 standard letters, but of individual paragraph selection. Dow's experience indicates that two operators can handle the work of six typists under ordinary circumstances, turning out individually typed letters without error.

Another problem—present in any employment office—involved the necessity of referring to job applications a score of times during progressive steps of employment procedure.

"We operate on the theory a file is a place to put papers away, so they are available for fast reference," Dr. Clack said. "Under our system, the application either is in the file or it's on a supervisor's desk for action. No chargeout is needed.

"And we have a good practical test of whether the procedure works: If a filing system is inefficient, people tend to horde the papers they want. Our people have found that everybody benefits by keeping the applicants' papers filed numerically where they belong."

Dr. Clack describes the IBM procedure as "the backbone of the whole office system."

"We don't need a tickler file or a follow up file," he says. "The data is recorded immediately and in such a way it can be processed in any way we want. No one has to count or dig up statistics by wading through application files."

The computer, manned by Dow's Data Processing Department, is an IBM 650, a medium speed electronic data processing machine. Older and cheaper equipment is used where needs are less demanding in terms of speed or complexity. By building its office system around electronics, Dow lists these achievements:

1. *Statistical analyses for comparison with available industry and national data.*

These reports range from breakdowns of interview sources and the degrees and majors of applicants to information on activities supplied to management. Placement supervisors receive a complete listing of employment progress in the departments they serve.

2. *Exception reports to highlight outstanding actions.*

Each placement supervisor wants and gets a periodic listing of files on no action taken, outstanding invitations, people interviewed and waiting decisions, offers, and acceptances.

At a glance, the placement supervisor notes the attrition rate and can control pressure in the recruiting "pipeline." Wallace calls this "one of our best results."

Exception reports also have proved of value in estimating housing requirements for new employees as well as in sharpening judgment of placement supervisors.

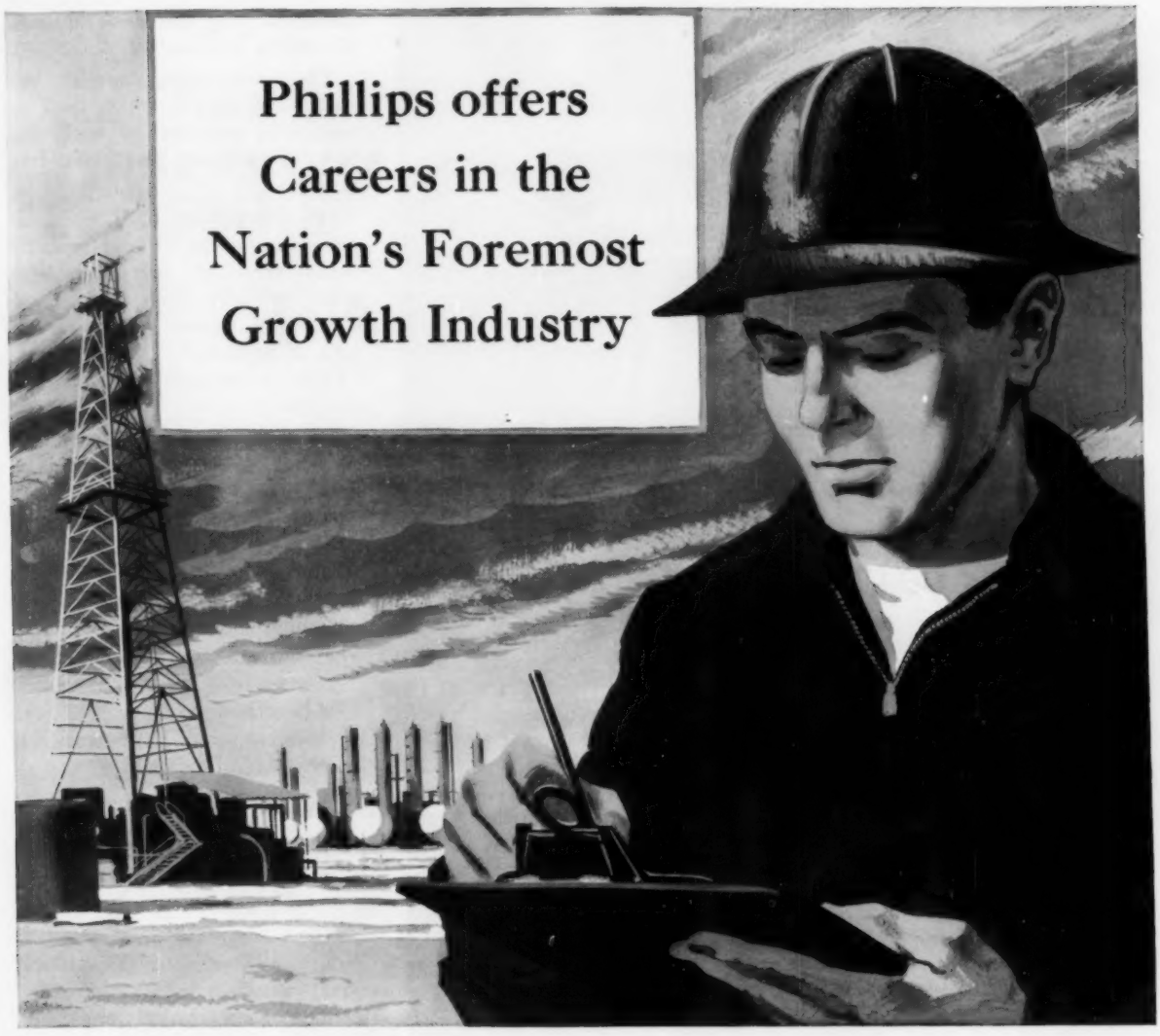
3. *"Feedback" of information to recruiters.*

Each of the 60 recruiters receives a monthly report on the progress of the people interviewed and actions taken in Midland. This enables the recruiter to report to colleges and universities on employment of their graduates. It also gives him an opportunity to compare his judgment of the applicant with the final disposition.

Has Added Applications

A variety of other applications of the data are in the works or already printed, some to help Dow assess its success in comparison with national yardsticks. "The business is fast-moving these days, Wallace notes. "Everybody is running data and making analyses.

"You hear that some company has an acceptance rate of 20 per cent, and you wonder whether we are talking about the same kind of people—just engineers, for instance, or all technical men, or people with one degree or three. We can break it down in any such



Petroleum, in addition to being the world's most important source of energy, is also a vital raw material for thousands of petrochemicals. Keeping pace with the increasing demand for oil and natural gas, the petroleum industry is a leader among the nation's growth industries. And Phillips Petroleum Company is the fastest growing of the ten largest oil companies.

Phillips rapid and continuing expansion offers excellent opportunities for technical graduates to choose careers in such varied fields as research, exploration, production, manufacturing, transportation and marketing. And in addition to petroleum fuels and lubricants for automotive, aircraft and industrial use, we produce and market a wide variety of petrochemicals, and operate Government-owned rocket fuels and atomic energy installations.

Thus, no matter what your students' interests are, they will find a challenging opportunity in some phase of our operations. Write to our Technical Manpower Division today for copies of our new brochure, "Career With A Future." The cooperation of college placement authorities with Phillips representatives has proved a great benefit to the Company and to the many graduates who are making careers with Phillips.

Phillips 66

D. R. McKeithan, Director
Technical Manpower Division
PHILLIPS PETROLEUM COMPANY
Bartlesville, Oklahoma

some simple equations for the college senior - -

Company Growth	=	**Advancement Potential**
Business of Responsibility	=	**Positions of Responsibility**
Respected Field	=	**A Prestige Career**

You don't have to master a slide rule to calculate your future with these equations.

● Dynamic growth sets the tempo of the Massachusetts Mutual. Ranking among the top ten life insurance companies in the nation, the company has more than trebled its life insurance sales in the past decade. This pattern of expansion means a corresponding pattern of advancement for ambitious and capable college graduates rising within the organization to fill an increasing number of management positions.

● The immense responsibility, both to policyholders and to the national economy as a whole, that is involved in the life insurance business is shared by the employees of the Massachusetts Mutual in a wide variety of decision-making positions. A business in which 3.5% of the total disposable income in the country is invested each year requires responsible personnel with initiative and good judgment.

● People are becoming increasingly aware of the importance of life insurance for a large number of "living" purposes. As the community becomes more insurance-conscious, its respect for the institution that fills such a vital social need increases. Whatever the work you do in Massachusetts Mutual's diversified organization, your association with a highly-regarded institution will give you a special position of prestige in the community.

For more information, contact your placement officer, or write to James Greenwood, Personnel Secretary, Massachusetts Mutual Life Insurance Company, Springfield, Mass.

Massachusetts Mutual
LIFE INSURANCE COMPANY
SPRINGFIELD MASSACHUSETTS

In our second century of service

category. You just deal the deck of cards a different way."

The wide-ranging annual departmental report, which used to require 30 man-days of work, can now be prepared in about five man-days.

On a long-range basis, the electronic technique ties in with a broad personnel inventory program. "We're trying to fashion a tool for present employees as well as applicants," Wallace says. "There is certainly no hard and fast line."

"Basically the system involves recording of data at the moment of decision and processing it semi-automatically until the final reports are made. We could call our use at the moment 'vertical integration.' We see no major problem in expanding it horizontally into other areas of industrial relations."

As a result of brushing shoulders with electronics, Dow technical employment people have attained a healthy respect for their tabulating tools.

"Under our old system, we'd have to sort file cards dozens of times," Wallace says. "This system is fast and efficient and it takes the drudgery out of the operation."

Both Wallace and Dr. Clack think value received can be easily justified on an economic basis.

All told, Dr. Clack estimates that data processing costs his department an average of $200 a month—or about half the salary of one secretary. Without it, he estimates that at least three additional people would have to be hired—and even then they could not cope with peak loads.

He thinks the system has "sharpened our judgments rather than taking them away from us." Yet Dow did not set out to build a system around an available tool, "just because it's there." Nor does it necessarily suggest that "other companies please copy."

"Our approach was more in the line of deciding what equipment would best do the job for us, then tailoring our procedure to fit."

find your future with UARCO

SALES

PRODUCTION

ACCOUNTING

ENGINEERING

Q. What does UARCO do?

A. As a major producer of business forms and forms handling equipment for more than 60 years, UARCO serves the entire American economy from small retail establishments to the largest corporations. All enterprises depend upon forms to control such key operations as purchasing, receiving, production, selling, disbursing, billing, stockkeeping, collecting and delivery. UARCO manufactures a complete line of continuous and pre-assembled forms for manually and electrically operated typewriters, accounting machines, electronic data processing machines and autographic registers.

Q. What about the future?

A. New developments in machine accounting and data processing have opened even greater fields of opportunity to the forms industry. The need for high-quality, precision-produced business forms has increased yearly with the increasing sale of electric typewriters and tabulators and the installation of complex systems for processing data. UARCO is in the forefront of this growth—in engineering, manufacturing and sales. A growing company in an expanding field creates opportunities for personal development and advancement.

Q. Where is UARCO located?

A. UARCO operates seven manufacturing plants and maintains forty sales offices throughout the country. Executive offices are in Chicago. Factories are located in Chicago, Illinois; Cleveland, Ohio; Deep River, Connecticut; Watseka, Illinois; Oakland, California; and Paris, Texas.

Q. What opportunities does UARCO offer to college graduates?

A. Career opportunities are available in all areas of our business to liberal arts, business administration and engineering graduates.

SALES—Trained to be business forms specialists, UARCO representatives sell to the owners and managers of business enterprises. A salary and commission plan, plus good repeat volume, affords top-notch earning opportunities.

PRODUCTION—An in-plant training program covering all phases of manufacturing prepares graduates for posts of responsibility in production. Training covers machine operation, production control, quality control, material control, and accounting.

ENGINEERING—Opportunities are available in two fields: Production engineers design and develop printing and paper processing equipment. Product engineers create new and improved stationery products for use with electric accounting and tabulating machines. Prior to assignment to projects, engineers receive thorough on-the-job training. M. E. or E. E. degrees are required.

ACCOUNTING—Upon completion of our training program and a period of internship, accountants receive administrative assignments in cost, general accounting, budgeting or auditing.

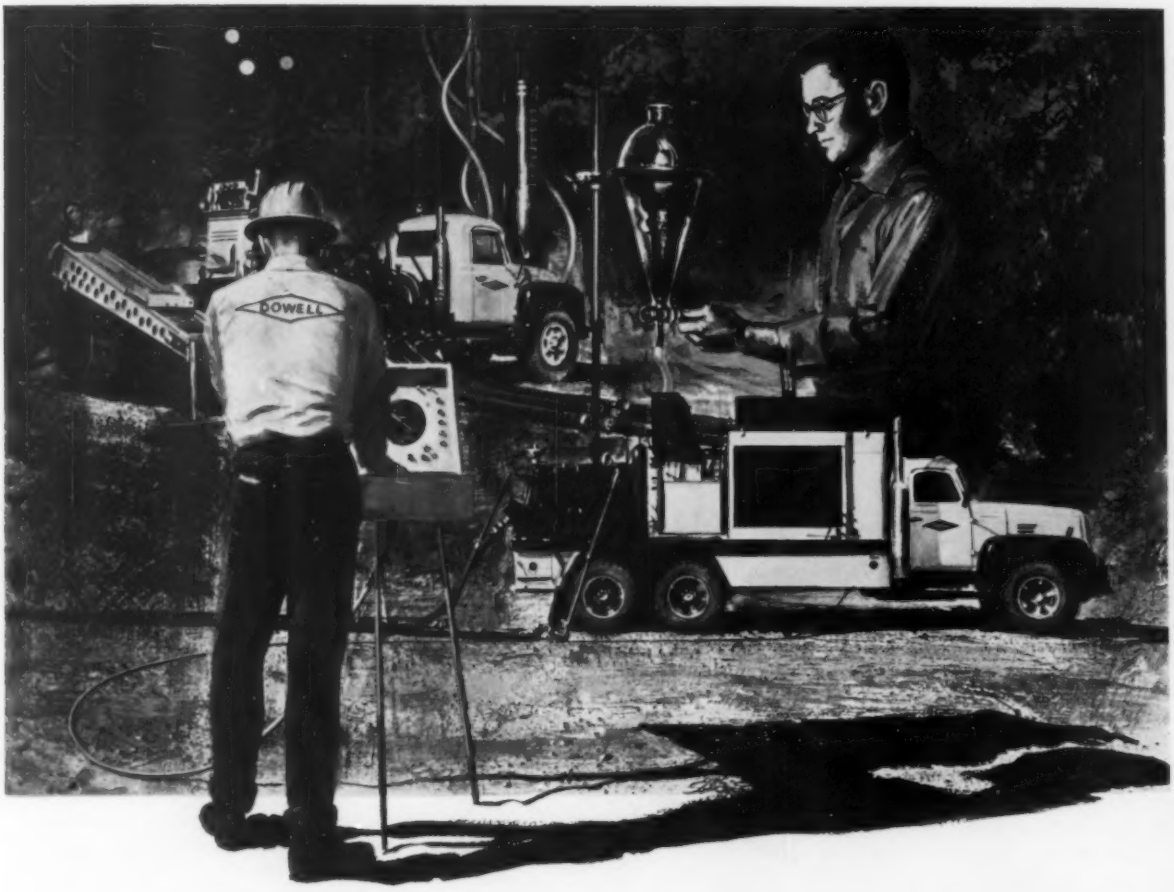
For further information about **UARCO**

Contact your college Placement Director for a campus interview date. If arrangements have not been made for on-the-campus interviews, send your personal resume to:

Industrial Relations Department

UARCO *INCORPORATED* 141 West Jackson Boulevard, Chicago 4, Illinois

TECHNICALLY-TRAINED MEN LEAD DOWELL'S PROGRESS AND GROWTH



The success of Dowell well-stimulation techniques depends on versatile, technically-trained graduates like *yours.*

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Besides petroleum engineering work, Dowell offers the college graduate important and interesting careers in physics, chemistry, design, maintenance, accounting, management, manufacturing and technical sales.

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C.C.N.Y. Solves a Common Placement Problem with a

PIN-POINTED PROFILE PROMOTION

When the "on-campus" interviews are approaching an end and a number of capable seniors remain unhired, it is tempting to let the addressing machine solve the problem. Some advance planning, however, has been found to bring the right number of offers in the categories where they truly serve the purpose.

By Lawrence A. Lansner

Placement Director, Bernard M. Baruch School of Business and Public Administration, The City College of New York.

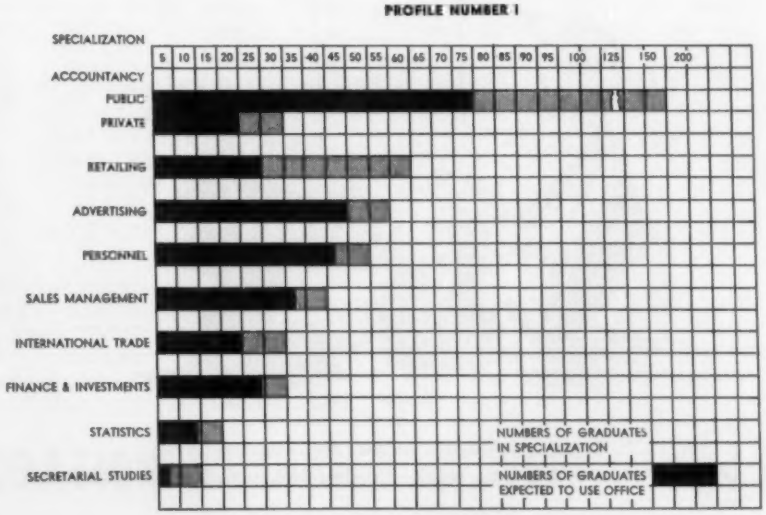
In order to promote job opportunities for graduating seniors who have not been hired as a result of the "On-Campus" interviewing program, our placement office has been in the practice of sending out a general mailing to the twenty thousand firms in the addressograph file. Traditionally, the response to this campaign was satisfactory; a new flow of jobs would begin to come in and the graduating seniors would have additional job opportunities to explore. This mailing technique, however, had its limitations. In covering the entire employer file it also stimulated activity in such job areas as Accountancy, Secretarial and Office work, etc., where there was already a surplus of job opportunities. At the same time it did not produce the necessary flow of jobs in such scarcity areas as Personnel, Foreign Trade, Industrial Management, Advertising, Finance, etc.

New Campaign Devised

As the time approached for the mailing for the January 1957 graduates, the outlook seemed quite dismal. Sufficient postage for a mass mailing campaign was doubtful, while the anticipated need for new job opportunities remained fairly constant. Confronted with this budget problem on one hand and the impending pressure from students on the other hand, the Placement Office hit upon a low cost, highly selective job promotion campaign. A campaign that, hopefully, might increase the normal, anticipated flow of job opportunities in areas of scarcity without unduly increasing the number of job requests that could not be readily serviced, and at a cost of 1/10 that of a mass campaign.

The first step was to contact the Registrar's Office and obtain a breakdown of the various specializations in the school and the number of graduating students in each area. Then a list was compiled of those seniors who had received and accepted job offers as a result of "On-Campus" interviewing. To this list was added those students who planned on doing Graduate Work on a full-time basis, those going into the Armed Forces or leaving the New York area immediately after graduation, and those students who, for any reason, would not be available for placement after graduation. Subtracting these totals from the figures received from the Registrar's Office gave us a fairly accurate profile of student demand that the Placement Office might anticipate for its services. (See Profile I).

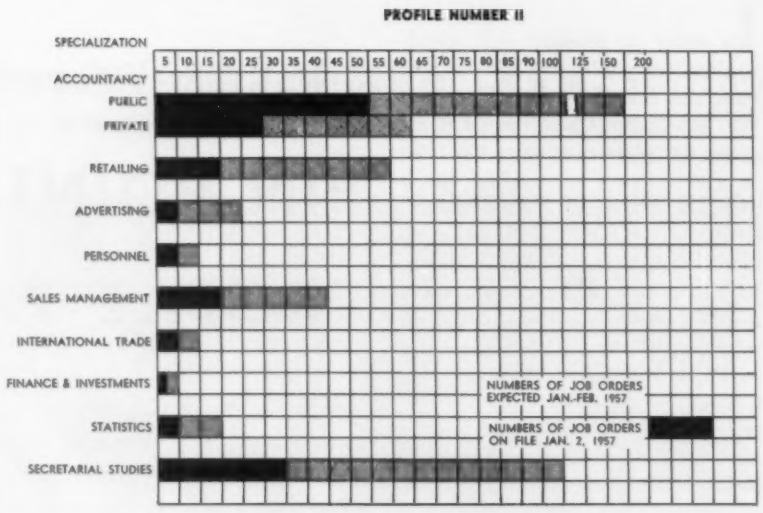
A list of job openings on file with us on January 2, 1957, was then prepared. Added to these were projected figures of the flow of jobs that could be anticipated during the months of January and February. This supplied us with a profile of the areas of anticipated sufficient and anticipated insufficient job openings. (Profile II). Placed



along side Profile I (anticipated demand of the office) a very accurate picture was obtained of the areas in which job promotional activities had to be concentrated.

Equipped with this information, letters were then prepared for mailing to firms in industries that might have the kinds of positions that the students would be seeking. A separate letter was drawn up for each field of specialization in which anticipated student demand was high and current supply or anticipated openings were low. The letters were specifically slanted to the particular field with mention made of the courses given in the department and the fact that graduating seniors were available for interviews. In addition to varying the content, the appeal of the letters was also tailored with respect to the type of industry being written to.

Using the addressograph file, firms in the selected industry were designated. Approximately 1500 letters were sent out in four equal amounts during the second and third weeks of January. To avoid congestion with the normal accumulation of mail that arrives early in the week, the letters were mailed on a Tuesday and Wednesday.



The results of this selected profile promotion were very gratifying. A number of firms responded within a week of the mailings and identified their phone calls or letters as having been stimulated by the letter that had been recently sent to them. There was also a considerable increase in new job possibilities in areas to which the mailings had been directed but without any specific mention to the mailing. It is felt that at least half of these were due to the mailing since the anticipated normal flow of job openings would not have been as heavy. Finally, as late as one month later, several firms responded and mentioned the letter that they had kept on file for a more opportune time.

Selective profile promotions have proven to be a very valuable method of increasing the availability of job opportunities in areas of job scarcity without increasing job orders in areas in which there is already a surplus. In addition they accomplish this result with a smaller mailing thereby lowering the expense of stationery, printing, and postage. The setting up of individual letters offsets this saving somewhat but not unduly so. Similar type profiles can be developed for other graduating classes as long as attention is given to changes in student demand and changing labor market conditions.

Selective promotions should not be used exclusively. Firms that periodically call upon the office that do not fall into any major job category should not be neglected. At least once a year, perhaps at the beginning of the academic year, the entire employer file should receive some form of general promotional material.

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The success of the more than 40 Burroughs products in accomplishing this aim is reflected in these facts: more than 33,000 employees, 31 plants, two research centers, 154 Burroughs-owned sales branches, over 3,400 independent dealers.

These figures are growing fast. And as they do, our present products and all new ones under development offer increasingly bigger opportunities for men who want challenging and rewarding careers -- particularly as engineers, sales representatives, or accountants.

In addition to important things like prestige, higher income and security, the Burroughs man has the enormous satisfaction of helping to release man's mind from tedium and freeing it for bigger and better accomplishments.

Perhaps many of your students interested in sales, corporate accounting or engineering work would welcome that special satisfaction, too. Burroughs Corporation, Detroit 32, Michigan.

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Extending the usefulness of man's mind

Continued from page forty

at Ivory Soap in production. They concentrated on the mechanical drive of the temporary storage tray on which warm strips of Ivory are placed. The soap is extruded from the making machine continuously and cut while moving. The strips are "picked off" individually and placed on trays for cooling before being cut to bar size for the final stamping and packaging.

Then the three went to the company's basic research facilities near Cincinnati. Here in the laboratory of the process development design group they used a mock-up of the Ivory production line to work out solutions. Their sponsor guided them into three lines of attack: a minimum solution, making adjustments to the equipment already in use; major alterations and redesigning of the tray drive requiring it still to fit into the system presently in use; and an "ideal" solution, a new design for the whole line incorporating the tray drive function to best accomplish production. Economic feasibility was a major factor for consideration in each possible solution.

Problem work filled the remainder of the week punctuated by a group tour of the company's toilet goods manufacturing plant on Wednesday and brief talks on construction department and process engineering functions by the men in charge of those departments. On Friday those in the Engineering Division Workshop met to present reports on their problems. Each team reported to the rest in the Engineering Division Workshop and to management people present. In this way, each member of the group shared his experiences with the entire group.

John is contemplating using his assigned problem and the solution he worked on, a hydraulic electrical servo-mechanism to control the tray drive, as a part of his thesis in master's degree study.

In the second week John and Douglas Taylor of Purdue were assigned to find solutions to a problem in warehouse cooling requirements. A special event was a tour of the company's research headquarters, the Miami Valley Laboratories, just outside Cincinnati. There, at a luncheon, the company's vice president in charge of manufacturing and vice president in charge of research and development spoke to all the Workshop participants in the Cincinnati area.

Continue Work as Group

On Tuesday with a week's experience behind them, the Engineering Division Workshop group toured the local synthetic detergents making installation. By this time the students were equipped to ask intelligent questions and could see how their activities fit into the manufacturing process. On Friday of the second week, the men met as a group again and each team presented its findings on the second problems to the rest of the group and to company management.

And the two weeks wasn't all work. Friendships formed quickly in the exchange of information between men from widely separated parts of the country. "Bull sessions" lasted far into the night at the hotel where the students stayed. The Engineering Division Workshop got together one evening at the home of the group's coordinator. Many in the Workshops saw Cincinnati Redlegs baseball games or attended a play at Cincinnati's summer theater-in-the-round.

With minor variations all 95 participants in this year's Workshops met with the same experiences. This is in addition to the large group which took part in the company's all-summer program. They came from 37 schools, ranging from MIT to Stanford and from Michigan to Texas A & M. Two European universities were represented for the first time this year.

Workshop students worked on such problems as:

- Evaluate a modification which has been made on a pilot plant in synthetic granules production and determine the best operating conditions for producing detergent paste using the modification.
- Find the source and determine how to correct excessive dust and product loss through the vacuum filter system on a high-speed synthetic detergents packing line.
- Determine fixed and variable portions of electrical power usage in several plant departments so that accurate charges may be made to the departments and to operations.
- Develop a method and design equipment to accomplish economically a special short-run production.
- Prepare a multi-factor incentive plan for a production operator.

These problems and many others were worked out in Factory Management Workshops held at company installations in Quincy, Mass., Dallas, Tex., and Long Beach, Calif., as well as at the Ivorydale plant, and in the staff Workshops—Engineering, Industrial Engineering, and Research and Development—in Cincinnati.

The Workshops are designed to accomplish a dual purpose: to give the students a brief industrial experience which will help clarify their thinking about industry before the time when a career decision must be made and to show them the opportunities within the company. Not all the participants receive offers of regular employment, and not all those offered accept. More than merely a high-priced recruiting technique, Procter & Gamble justifies the Workshop program as a means to help students make career decisions with the resulting public and campus relations value.

As a "getting to know you" device, these young men gain their initial experience in industry, and more important, they have an

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HERE at Goodyear, the opportunity—and the need—for college-trained minds is steadily expanding.

For nowhere else in American industry is there any greater diversity of output—tires, chemicals, plastics, aviation products, atomic energy—and countless more.

We are grateful to you for the many promising careers you have already helped launch at Goodyear. May we continue to prove that the move from ivy-clad wall to Goodyear Hall is one of the smartest a graduate can make?

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opportunity to see themselves actually functioning in the field of their choice in an industrial setting. They gain a better understanding of industry, of their own career aims, and, of course, carry their impressions back to campus where countless experiences are retold. Though no long-range judgments can yet be made, the company feels that employees who join through the Workshop program fit well as a result of the sound basis on which they have made their employment choice.

The description of two fast weeks is really but a small part of the story. The mechanics of coordination and planning behind the Workshops require through-the-year effort: selecting the participants and making assignments to each of the Workshops, arranging for living quarters and transportation, assigning employees as problem sponsors and group coordinators, and arranging all the myriad of details involved in selecting the problems and working out the timetable of activities.

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The College Blue Book

THE STANDARD WORK OF REFERENCE OF HIGHER AND SECONDARY EDUCATION IN THE UNITED STATES OF AMERICA

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1st Edition - 1923 9th Edition - 1959
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The College Blue Book
P.O. BOX 311 YONKERS, N.Y.

The selection process for Workshop participants is similar to that for permanent employment and is as rigorous. The company's policies of promotion from within and careful selection before a job offer is made have grown out of its desire for men in career positions, not short-term jobs.

One of the necessary decisions is who to include in the Workshops; why not juniors, sophomores, or even freshmen? P & G limits eligibility to students a year from their final degree for two reasons. First, the basic philosophy of the Workshop is to show the student, through experience, the type of problems he will soon face. Generally those with less training are not prepared for the problem-solving situation. The second reason is an internal one. The time on the part of management employees necessary to accomplish the program is extensive so it is important that the number of participants be realistically determined.

The selection of problems is one of the most difficult phases of the Workshop program. Ideally the problems have to be widely varied to present a challenge to each man's interests; they have to be practical and meaningful to insure that the student does not feel he is doing "busy work;" they must be within the limit of each man's capability and training; and they must be capable of solution with only a limited amount of working time.

Great effort has been expended to bring the problems as close as possible to this ideal. The selection of pertinent problems, neither too long nor too short and which can give the man a feeling of accomplishment, remains one of the most difficult areas of planning each year. And the effort involved in adapting current company problems to the Workshop format is not all a one-way street for the student. In several instances a Workshop participant has found a general, worthwhile solution which the company can use.

The company's technical training group works out the master plan for the Workshops and handles over-all coordination. Each location and staff division is responsible for housing and travel arrangements, selection of sponsors and problems, and coordination of their own program. The selection of responsive, interested sponsors is one of the keys to a successful Workshop.

The sponsors participate in the selection of the problems to be given their men. It is their responsibility to see that the men have facilities, that work necessary to enable students to do their problems is accomplished, and that the students themselves, unfamiliar with factory or office routine, are guided so they may work steadily on their problems without delays.

This effort reaches its climax in the busy two weeks' session. But it doesn't stop there. Following the Workshops, students' written problem reports are weighed by sponsors for information and ideas which are worthy of further development. Evaluations of their two weeks by Workshop men themselves and the evaluations of coordinators and superintendents all funnel in to the technical training group where weaknesses are discovered and strong points are identified and examined for more emphasis and development. Follow-up employment procedures also take place. This process, easier to say than do, is only now being completed for the Workshops held this past fall.

The results of the 1957 Workshop program are as yet unknown. The students in the program are under no obligation to the company and offers will be made during the regular recruiting season. Undoubtedly, a number of the participants will join P & G, but there is the intangible, yet probably most valuable result of all: 95 college men better able to make an intelligent career decision for themselves, men who have a closer knowledge, and it is hoped, a favorable impression of just what a career in industry means —for them and for the many others on the campus, to whom they will pass along their information.

LOOK WHO'S IN THE DRIVER'S SEAT...

...but is he really?

and equally important, is he going to get somewhere?

Perhaps you have heard an upper classman say, almost complacently, "Times have changed."

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Nevertheless, you may have seen fit to caution against an over-confident attitude, knowing that in many respects, times have not changed at all. That "first job" is every bit as important today as it was five, ten, twenty years ago. Starting salaries remain only one of many factors to be considered. And a man's future is still necessarily linked to the future of the company for which he works. Moreover, a thoughtful examination of such matters as potential growth, challenge, advancement policy, facilities, degree of self-direction, permanence, benefits and the like often indicates that real opportunity *still* does not grow on trees.

For factual and detailed information about careers with the world's pioneer helicopter manufacturer, your graduating students may write to Mr. Richard L. Auten, Personnel Department.

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SYSTEMS ENGINEERING

Continued from page thirty-two

industry markets or in product markets. Each marketing engineer is responsible for developing sales programs for new and established products in a particular market. He also serves the regular sales engineers as consultant on problems which call for the first-hand knowledge of a specialist.

In this field, the salesman is truly an engineer. Because he works in customers' plants, rather than our own, he's called a field engineer. His job is to help customers solve their instrumentation and process control problems through the application of the right instruments and accessories. His tools are blue prints, tables, slide rule, and above all, engineering common sense.

Salesman Is Trained Observer

The instrument salesman must have an engineer's understanding of both his own products and his customers' needs. He is a trained observer of the performance of plant equipment—furnaces, kilns, towers, lehrs, and scores of other operating units. He sees where instrumentation can contribute to more efficient process operation, and his instrument engineering experience tells him what instruments, what automatic controls to specify.

In working for their bachelors' degrees, most college graduates seem to receive a rather mild exposure to courses in instrumentation. Colleges now offer many good courses in instrument fundamentals but most of them are electives, taken by only a fraction of the students. For many undergraduates, knowledge of instruments is limited to those encountered in the physics or electrical laboratory. Few have had a course specifically devoted to electrical measurements. Very few have received instruction about instruments for industrial measurements and automatic control.

To effectively bridge this gap between undergraduate scientific or engineering education and the practical on-the-job knowledge needed to fulfill a specific job in instrument engineering, L&N has developed a year's training program which aims to achieve the objectives of all instrument manufacturers. The primary object is to prepare the college graduate, within a reasonable length of time, to function as a junior engineer—and to grow with experience—in any of several departments that employ engineering and scientific graduates.

This course is organized under the supervision of the Personnel Development Staff in our Industrial Relations Department. It is conducted on an 8-hour, 5-day week basis. Otherwise, it has all the characteristics of graduate level college instruction. Faculty members are recruited from the Research and Development, Engineering, and Market Development staffs. Each instructor is a specialist in his field.

Instruction includes lectures, laboratory assignments, field trips, discussion periods, and written examinations. The trainee who completes this course has received the equivalent of about a semester of post-graduate professional study in instrument engineering.

Rotational Assignments Follow

Following this, a series of rotational assignments gives the men a first-hand knowledge of everyday working problems in each of the major departments to which they might be assigned upon completion of their training.

This combination strikes a balance between theory and practice—between listening and doing—between technical and broad knowledge. It is aimed at giving the trainee a solid background on which he can later build his own specific and specialized experience into a successful career as an instrument engineer.

The instrument industry needs creative engineers in ever increasing numbers. It offers ever growing opportunities. As automation increases—as new processes, products, and industries become part of our economy—instruments become increasingly important and complex. The industry needs men who can analyze technical operating problems and bring forth a solution, who can research and design new equipment to fulfill new needs, and who can resourcefully apply existing equipment to help industry operate more efficiently.

NEW SUMMER LISTINGS TO BE ISSUED BY CYET

The Committee for Young Engineering Teachers (CYET) of the American Society for Engineering Education, through its institutional representatives, is compiling a new list of engineering teachers who are interested in summer employment. A standard "Form Indicating Probable Availability for Summer Employment — 1958" is being utilized which includes the following information: age, academic rank, degrees, field of work, type of work within field, geographical preferences, security clearances, etc.

The new list will be made available for the cost of duplication and mailing to industry during the early part of 1958 (no later than the first part of February). Any company interested in obtaining the list should write to: Jerry G. Richter, Program Chairman, CYET, 204 M. E. Bldg., Penn State University, University Park, Pennsylvania.

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A PARTNERSHIP IN ENGINEERING EDUCATION

Continued from page twenty-two

professional societies. They involve integration into civic life as well as continued education in social and technical fields. Since this movement started only a short time ago, there are only a few organized programs in operation. There is real need for widespread adoption of this type of engineering interneship so that the young graduate may obtain his practical experience in an organized way from the people best suited to provide it.

On the whole I am encouraged by the prospect of better education for the engineering student who completes his work for the bachelor's degree and who then receives enlightened professional guidance from industry. I am not at all happy about the situation which is developing in the graduate schools of our colleges and universities.

There is great need for increased numbers of engineers who have thorough graduate training through the master's and doctor's degrees. Unfortunately, the present shortage of engineers has prompted many industries to lure students away from the campus as soon as they receive the bachelor's degree. Some companies which are located near universities encourage young engineers to go to work and then take graduate courses during the evening or at odd hours during the day.

So much for the quality of engineering education. Now, what about the quantity? It has been estimated by various sources including the U.S. Office of Education and the Fund for the Advancement of Education that this country will need approximately 50,000 to 60,000 new engineers annually by 1970. We produced approximately 31,000 in the accredited engineering colleges in 1957. Let us look into the possibility of expanding our output to meet the anticipated need. Obviously we shall need a large number of qualified applicants from the high schools, a large number of faculty members to teach them, and adequate facilities in which to accommodate them.

Assuming that the distribution of intelligence among the population will remain as it is, we may expect that approximately one-third of the people in the United States will be mentally qualified to study engineering at least through the bachelor's degree. The number of potential engineers should be sufficient to meet our needs. It remains to give these people the necessary education and then to utilize them efficiently. This education must include the study of science and mathematics in the high schools.

We have now reached the point where most engineering colleges are operating at maximum capacity. May I emphasize that many colleges are now getting along only by using temporary barracks buildings which were erected to handle the great influx of veterans after World War II. It is obvious that we must utilize every means of making the best use of the limited facilities which we have. In my opinion, we should raise the admission standards so as not to use valuable space for students who will never graduate. However, even though we resort to every possible expedient, I believe that if we are to provide engineering education for the growing college-age population which will increase 64% by 1970, we shall have to expand the physical plants of our colleges. Industry can help solve this problem by providing funds for buildings and equipment.

Assuming that the colleges will produce the needed number of engineers, every precaution must be taken to utilize these men effectively. Fifty thousand engineering graduates put to work at non-engineering tasks will not meet our needs. Each engineer must be utilized for creative engineering design. He must be adequately supported by technicians who will relieve him from the routine phases of engineering activities. The engineer must be aided by technicians just as the physician is aided by nurses.

It has been estimated that there should be as many as three to five technicians for every engineer. Although exact information is lacking, it is probable that the average ratio is one to one in the United States at present. (A recent survey of 18 oil and chemical companies conducted by the Engineering Manpower Commission showed an average of 0.9 technician per chemical engineer.) There is a very great need for increased numbers of technical institutes which will provide the two-year terminal programs for technicians. Unless we get a much greater number of technical institute graduates in the near future, the full effectiveness of our engineers will not be realized. On the other hand, in my opinion, if we could effect a modest increase in the use of competent technicians, we might get along with 40,000 rather than the estimated 50,000 to 60,000 new engineers per year by 1970. I recommend that the campaigns which have been so successful in producing interest in engineering now be turned to the technician. Industry must take the lead in this connection.

As our machines and processes become more complex we shall need increased vocational training for the people who will operate and maintain them. Furthermore, provision must be made for the continuing education of all adult workers to enable them to keep up with the rapid changes which will occur. Automatic machinery does not take care of itself. The more automation we have, the more skilled our workers must be.

With each partner performing the functions which it can do best, industry and the college together can give this country the technical education needed to meet anticipated problems.

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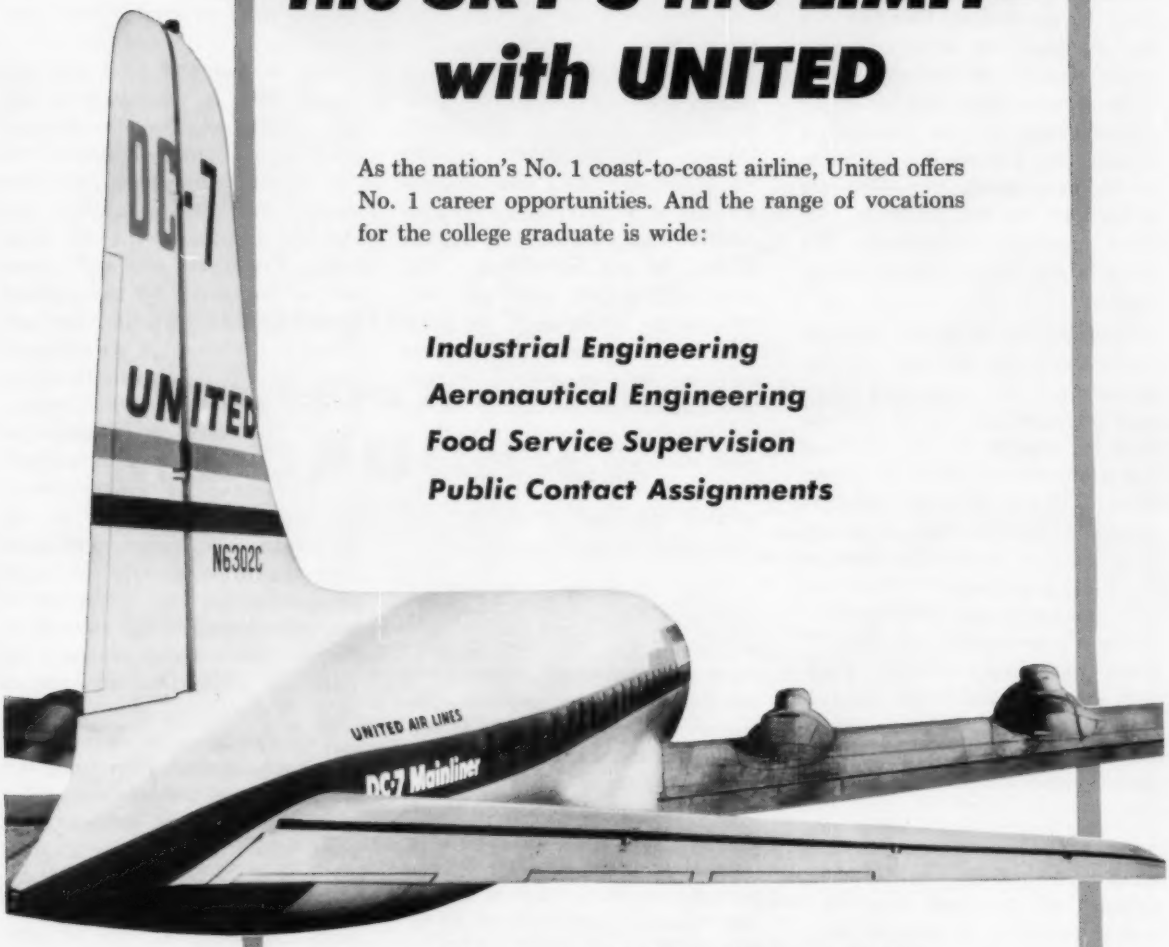

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UNITED
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GULF BUILDS A RECRUITING TEAM

Continued from page twenty

facetious, it was, nevertheless, effective. He emphasized that to avoid this dilemma the recruiters must become familiar with accepted principles of recruitment and obtain an understanding of the Company's organization and needs. Throughout the meeting, the recruiters were inclined to use the phrase to evidence approval or disapproval of a point, often with mirth-provoking results.

Listening to facts on benefits, policies, and practices can be very wearisome. To avoid this, they were presented in a short, concise form in response to the questions that are ordinarily asked by candidates. "What is your vacation policy?" "Do you have a library or information section?" "How is the housing situation?" "Do you have an educational aid program?" "What is your starting rate of pay?" There were many others. Each reply was frank and to the point; a demonstration to the recruiters of the best way to answer such inquiries within the shortest possible time.

Similarly, Division Directors were asked to review the work of their divisions in the same way they desired recruiters to present their stories to candidates. They also indicated the number of people needed and training required. Some desired ingenuity and perseverance above other qualities. Others, leadership, drive, and personality. While all wanted students who possessed good grades, they preferred those who had demonstrated steadiness in scholastic performance instead of ups and downs, which might indicate flashes of diligence, inspiration, discontent, or carelessness. None wanted the student who had taken "snap" courses in place of solid electives.

Considering the somewhat special nature of the program, and to guard against saturating the recruiters with "home-grown" opinions, this spot was picked to introduce an authority from a college who could present the story from his side of the fence. Mr. George N. P. Leetch, Director, Placement Services, The Pennsylvania State University, was selected as the Distinguished Lecturer. In his two-hour appearance, neither he nor his audience, the recruiters, pulled any punches. "Placement Directors," he said, "should be impartial, and treat everyone with equal consideration. We cannot, however, fail to be influenced by companies who do a good job of recruiting. This means preparing well for their visits, sending qualified recruiters, and conducting proper follow-up."

When asked by a recruiter if placement directors were not largely responsible for the students' fantastic notions about salaries and self-importance, he replied, "Industry has only itself to blame. They offer the same salaries to the best and poorest students in the class. They have publicized shortages and advertised such favorable rates of pay and benefit programs that the students come to believe they are especially created to fill the void."

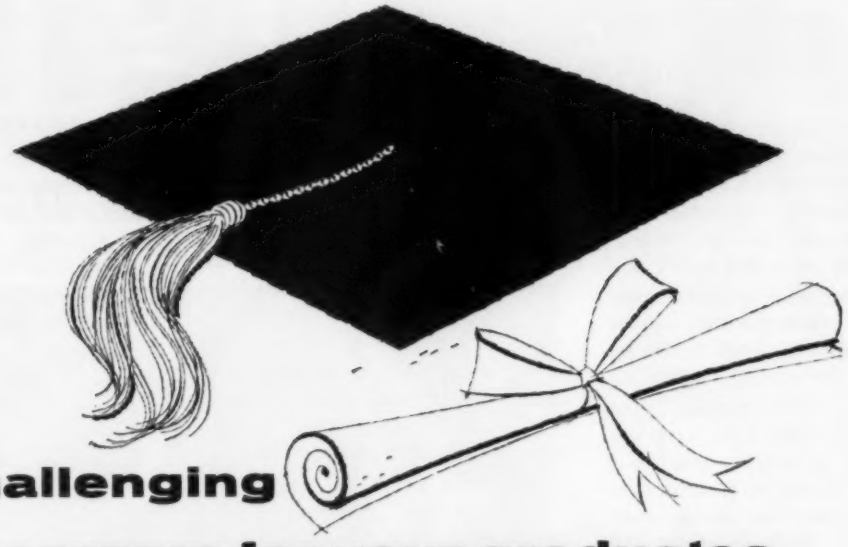
He deplored the practices of recruiters who expect special concessions from professors, or seek to hire them away from schools. Also of questionable public relations value are the programs of industries who visit 100 schools to hire 10 people. "Some companies," he continued, "also make visits intermittently and expect good results. The greatest success comes from the intelligently planned and sustained program. It should not be tied in with changes in the business activity of the firm. Recruitment should be treated as any other long-term investment, such as buildings and equipment. Investments in personnel are investments in the company's future and should be handled as a cost of doing business."

"To obtain the best results," he suggested in concluding, "treat college services with the same consideration as you would expect them to treat similar services in your company."

The second and final day was begun with a discussion of the Corporation's College Recruitment Program. It currently divides the United States into Area I, all states east of the Mississippi River, and Area II, all states west of the Mississippi River; each with a Chairman who is responsible for coordinating and administering recruitment activities in his area. A committee is made up of one representative from each major division of the Corporation. They serve as recruiters for their division and as its contact with the Chairman. Recruiters, while in operation, are responsible to the Chairman, who either coordinates their activities directly while on campus, or appoints a Captain to act in his stead. Each recruiter is prepared not only to represent his respective division, but all divisions of the Corporation as required.

Correspondence is through the Chairman, except where negotiations between a candidate and a specific division are involved. In every case, correspondence from the date of contact with a candidate, unless other and more involved steps are instituted, must be completed within 15 days. No application goes unanswered or candidate left dangling with uncertainty over where he stands.

Subsequent discussions were concerned with sources of candidates, what to look for in candidates, aids available to recruiters, and how they should be utilized. A typical problem, intended to increase the recruiters' powers of observation, utilized a specially designed "Limited Fact Test." It involved projecting a job description on the screen and following it with partially completed applications from hypothetical candidates. New facts, such as pictures and recommenda-



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A career at Crucible is a challenge. May we talk it over with your graduates? *Arthur E. Murphy, Coordinator College Relations & Recruitment, Crucible Steel Company of America, Box 88, Pittsburgh 30, Pennsylvania.*

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tions were added after each showing. Appropriate intervals were allowed between showings for the recruiters to make ratings.

In the discussions that followed, it became apparent that many, in the initial ratings at least, read into the applications things that were not there. Others were influenced by the application's appearance, its completeness and the handwriting. Although the job called specifically for a B.S. Degree Chemical Engineer and paid a starting salary appropriate only for that level candidate, many chose the excellent appearing Master's candidate because "they wanted the Company to have the best-trained personnel possible." Still others failed to note that a candidate whose first name, incidentally, was Frances, could not possibly fill the job which was specifically for a male employee.

As additional facts were added, the recruiters continually revised their ratings. Some were influenced by the candidates' pictures, geographical locations, health, and other personal factors. All were influenced by the references which were presumably from professors whom they knew and respected. It became evident to all, however, that selections should not be made on the basis of limited data or superficial observations, and that the more data available, the greater the possibilities are for agreement between recruiters on the same candidates.

Practice interviews and skits showing right and wrong way methods, dramatically brought out many of the points discussed on the previous day by Mr. Leetch. The "wrong way" invoked the greatest comment. It included a recruiter capably played by a Ph.D. in Geochemistry, who arrived late, grumbling loudly, while making depreciating remarks about his "top brass," the weather, and the irresponsibility of students in general. Before completing the interview he had succeeded in blowing smoke into the candidate's eyes, insulting him, destroying his carefully prepared resume, and enlightening him on every subject but the one in question. He was capably assisted in this fiasco by two other recruiters who banged doors, sang, whistled, grilled the candidate intensively, ignored him completely, told jokes, and finally sped him on his way completely bewildered and vibrating from bone-crushing handshakes and back slapping.

"Closing" Is Important

Further demonstrations showed how to close the interview. This was considered a very important step, as even experienced recruiters have difficulty in saying "no" to a candidate, or in knowing when to terminate the interview. They were instructed to be frank, tactful, and not to leave the candidate "up in the air." "When it becomes necessary to discourage a candidate," instructed the Employment Manager, "always try to offer a concrete suggestion which might assist him in his search for employment elsewhere."

Finally, in the closing period, the recruiters reviewed the schedule of dates established for interviewing purposes at schools, and discussed conditions they were likely to encounter during the visit. This included showing pictures and scale drawings of good and contrasting placement facilities, and considering the programs and personalities of professors and placement officers.

The second phase of the program will, of course, be continuous. Initially, at least, on-the-job training for the new recruiters will involve being assigned to teams headed by experienced men. Every opportunity will be taken to increase their knowledge in this field through conferences and examples. Meetings will be held at regular intervals to discuss changes in manpower requirements, organization, company practices, and to enable the recruiters to exchange experiences as the recruitment season unfolds.

Although it is not always possible to measure the value of such a program in specific terms, we do know that our recruiters now have a good understanding of recruitment procedures. In fact, their interest in management and similar personnel activities in general has been heightened considerably. New lines of communication—up, down, and across—have been opened to them. Their contacts, both within and outside the Company, have been broadened. Since they represent a cross section of academic training and job interests, working and traveling together presents opportunities to exchange personal and job information. The noticeable spirit of comradeship that exists between them while visiting schools carries over into their work activities, and has become the basis of new relationships.

Fears that the recruiters could not separate themselves sufficiently from their own jobs to assume the multifarious tasks involved, have quickly evaporated. They, surprisingly, have demonstrated unanimous purposefulness in accomplishing the objectives. Naturally, loyalties to individual divisions still exist. These, however, have been subordinated to the degree necessary to accomplish the larger objectives set for the Corporation as a whole.

Management's attitude has, from the beginning, generated a high level of enthusiasm in the recruiters. It has been a "green light" to their participation. This, in itself, is a factor which will help us maintain the level of activity and interest necessary to succeed in the highly competitive manpower scramble in the coming months.

There are also some valuable by-products of the course which deserve mention. The recruiters are now among our better-informed employees. They are gaining confidence in themselves and in their associations with others. Recruiting requires them to speak in public, write letters and reports, and, finally, to appraise people objectively. Their recommendations must be based on the candidate's aptitudes, interests, and abilities, and not friendships, sympathy, or other "halo" effects. Defining their responsibility, authority, and accountability clearly, has made recruiting a valuable apprenticeship for further training in management responsibilities.

FYI

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▶*beat barnacles* ▶*water-resistant coatings*
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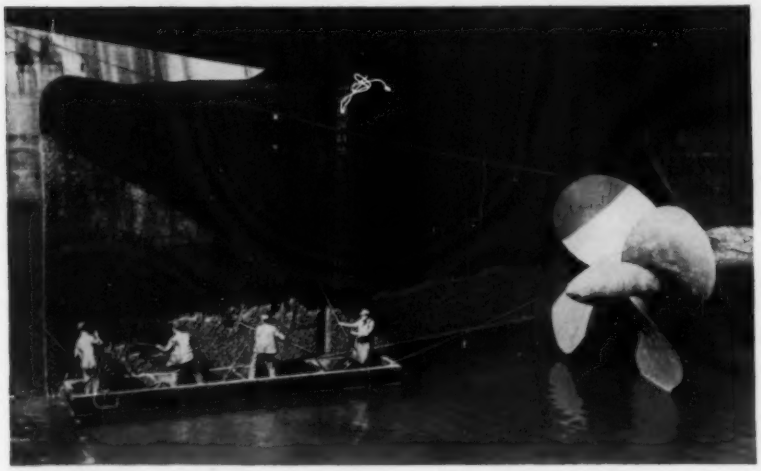

Beat barnacles

"Barnacle Bill" is not only the title of an old sea song—it's the price ship operators pay for inefficient operation due to barnacle-fouled hulls.

Although you can combat fouling with copper pigments, conventional copper bottom paints may create new problems by accelerating the corrosion of steel hulls.

MUTUAL sodium copper chromate to the rescue: research shows that it has both anti-fouling and anti-corrosive properties. No surprise either, because it is a member of the same pigment family as "zinc yellow," a chromate long used as a corrosion inhibitor in metal priming paints. Anti-fouling of course, because it contains copper.

This useful combination of properties also has led us to test MUTUAL sodium copper chromate in preservative combinations for wood, cordage, fabrics and paper, and in agricultural fungicides.

Olefin opportunities

Did it ever occur to you that your product might be epoxidizable? Or even hydroxylatable?

What, never? All we mean is you can upgrade it with hydrogen peroxide, to put you in new markets with greater profits.

With H_2O_2, you can upgrade such olefins as soya bean oil, cottonseed oil, tall oil, turpentine, linseed oil or unsaturated petroleum derivatives.

By upgrading, you find yourself making resin plasticizers, glycols, stabilizers, insecticides, monomers, lubricants, waxes, surfactants or brake fluids.

In the epoxidation and hydroxylation processes, hydrogen peroxide reacts with unsaturated olefins to form a completely different class of chemical compounds. Of course, hydrogen peroxide has been around for some time, but recent developments now permit broad commercial use of these processes.

Research people working in chemicals, plastics and pharmaceuticals will be interested in a new Solvay Process Division up-to-date review and bibliography on the subject.

Water-resistant coatings

Paper coaters know that if they want to keep a coating from coming off in water, they must insolubilize the binder after application.

Starch, casein, protein and latex are the most widely used paper coating and sizing adhesives. The major advantage of starch is its ease of use, but this is offset by its lack of water resistance. On the other hand, although casein, protein and latex give good water resistance, they are more expensive.

May we suggest a starch coating modified with U.F. CONCENTRATE-85, for low-cost, water-resistant paper coatings. A product of our Nitrogen Division, U.F. CONCENTRATE-85 is a low-cost, non-resinous, high-concentration urea-formaldehyde product.

You can obtain different degrees of insolubility by adding 2 to 50% to the starch, though 20% generally makes an excellent coating. Other assets: a simple mixing operation, a useable pH range of 4 to 8.

We have available a new technical paper on the subject, "A new product for the insolubilization of starch films."

New urethane booklet

In these columns, we've talked about what the industry calls "the next great synthetic." Allied's interest in urethane materials lies with our National Aniline and Barrett Divisions, which produce the key chemicals—diisocyanates and polyester resins respectively—used in making these versatile plastics. Now we have a new booklet available on urethane materials, detailing their applications and their future.

MUTUAL and U.F. CONCENTRATE-85 are Allied Chemical trademarks.

Creative Research

These examples of product development work are illustrative of some of Allied Chemical's research activities and opportunities. Allied divisions offer rewarding careers in many different areas of chemical research and development.

ALLIED CHEMICAL
61 Broadway, New York 6, N. Y.

WOMEN—OUR SECOND GREATEST RESOURCE

Continued from page sixteen

more money. Time points out that

> ". . . only the most exquisite melding of money, kindness, and men leaves a girl impressed."

Rough though the womanpower picture appears to be, it may be that relief is in sight. There'll be a different score in '64 when the big crop of World War II babies achieve the delightful contours described earlier. Then, barring some unseemly influence of the atom or of automation, industry's distaff dilemmas, employmentwise at least, will dissolve and an Utopian condition of gals abundantly available and excellently prepared will prevail.

So much for Part I of the three-part presentation. We now have a sketchy impression of the number and kind of women who work and some of the trends and influences affecting our female work force.

Part II, you recall, is a brief comment on some of the special characteristics of the gals who share our coffee break.

Discrimination against women in business does, of course, still exist. Our prime concern, therefore, is to attempt to discover if it stems from ungrounded prejudice or if it reflects a valid assessment of some of those characteristics and behavior which appear to make the female a problem on the office scene.

Why Not as Equals?

At this late date women have been accepted pretty completely into the clerical areas and into the non-supervisory spots. The pockets of resistance that still exist seem to be blocking the movement of women into supervisory, management, and professional posts. Hence it is the defections—or alleged defections—of the species which affect the ability to move into these realms that we shall particularly examine. Why don't men want to recognize women as equals when it comes to running the show?

Wilbert Scheer, personnel director of Chicago's Blue Cross-Blue Shield, had some pert and pertinent comments to make on this question in a recent talk titled "The Care and Feeding of Women in Business."

> "To be as successful as a man, a woman has to be *better* than a man. For one thing, she will most likely be judged by men. And most men have an antagonistic attitude toward women in management, which may be a defense mechanism set up when their status is threatened. Most of the opinions of differences between men and women in business are based not on scientific observations, but on incidental contacts or conversations, and many men's prejudices about women in business probably go back to childhood environment. Woman was fashioned from a man's rib and since then she has remained a side issue."

As for business women who develop male personalities, they tend to be disliked by their own sex because they have betrayed it, and by men because theirs is threatened. As for those who employ the opposite tack, men—and women—resent them too. Men—the objective ones at least—do resist the use of sex as an office device . . . I think. Most of us decry artifice and guile — when we recognize them.

Clearly, other factors are impeding the progress of women in business. Basically, I suppose it is the failure of men to recognize, acknowledge, and accept female superiority in any area. Most of us are prepared to accept the individual superiority of the woman—or women—in our lives, but when the base is broadened to the generic limits of the sex as a whole, limitations loom and we impose a ceiling —sometimes so low that they can't even stand up straight without bumping their heads. Women seem able to adjust to most jobs if the people around them are acceptable, whereas they may fail in other assignments—even appealing ones — if their people-contacts are unacceptable to them.

The womanpower study of the National Manpower Council sponsored seven conferences in different parts of the country and invited employers to comment on policies, practices, and problems in dealing with women in paid employment.

Employers Cite Refusals

Reasons employers ascribed for refusing to hire women included:

1. "Tradition"—The impression that there are "men's jobs" and "women's jobs." Skill requirements and qualifications of the applicant are overridden when this classification is enforced.
2. The belief that women possess certain traits which especially qualify them to work in certain spheres but exclude them from others.
3. The third general basis for rejecting women for certain kinds of employment ties in with labor cost. Employers contended that it often costs more to employ women than men as workers due to the problems they create and the special working conditions they require.

In some situations women are preferred over men, either because —though this was seldom acknowledged by the employers—they cost less or performed more effectively or were less demanding of advancement. Their shorter tenure is a strong negative influence as is also their higher absenteeism.

The belief that the breadwinner wife is unhappy or maladjusted is generally groundless. The nation's largest independent auto finance concern (CIT) queried its 3,616 women scattered across the country and found that three-fourths of the

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respondents like their dual role. Eighty per cent of the husbands help with the home work.

The virtues of the fair sex are too often elided. Women are often highly rational and usefully intuitive. Frequently they are highly motivated. Often they do have a strong attachment to their job. The discriminating company will not categorize its female contingent as a problem type—as a kind of minority group with limited potential for development and with highly circumscribed usefulness.

It is oversimplifying to say that, like men, women are various in their characteristics and their qualifications; it is at once unfair and unwise to ascribe to them as a group certain features deemed disqualifying for responsible assignment.

The womanpower report suggests that three kinds of women workers can and should be distinguished:

1. Those who are clearly "career women."
2. The younger women whose goals have not been set (and who may look forward to varying degrees of advancement).
3. The women whose job aspirations are limited.

Through the years, men's estimates of female qualification for responsible duties have, happily, modified substantially. *Newsweek* magazine in an article titled "The Doctor's a Lady" quoted the 1871 president of the American Medical Association as follows:

> "Woman's most striking qualities are uncertainty of rational judgment, capriciousness of sentiment, fickleness of purpose and uncertainty of action—all of which totally unfit her for a place in the medical profession."

"The obstacles are tottering," commented *Newsweek*. "The petticoat physician has arrived, 8,000 strong; she is wanted and her position is reasonably secure." However, here as in the other professions, the tendency to early marriages has reduced the number of female enrollments in medical schools. Here is at least one instance where men have not been responsible for retarding the progress of women—except as they pitch woo effectively—I understand the present phrase is "making out."

I don't think all women are unduly emotional, but there is one thing that is true about women; it is that no two of them are alike. Women are people and as such need to be assessed severally, not collectively. They should not be promoted or held back as a group because of some assumed but unproved alleged class characteristics.

Gives Evidence of Stature

The increasing numbers of women achieving responsible stature in a wide variety of fields afford solid evidence of the fallacy of selling the sex short. Women are found in top spots so frequently that it is hardly news when one is encountered in the presidential chair. We are surrounded with dramatic proof that large numbers of women are effective and potent executives. Never before in history have there been so many women in prominent government and public posts at national, county, and city levels. Elective and appointive jobs at top level are theirs through the whole government operation.

Abundant were instances where women had risen to positions "second in command." This was most obvious as a trend inpersonnel and industrial relations departments, accounting and statistical divisions, in advertising, and in branch operations.

Women were doing well as specialists in such fields as home economics, retail store buying, and hospital administration.

Most executives contacted said in effect that theoretically there are no administrative jobs which women are not considered capable of holding. Greatest potential appeared to be in the areas of research (economic, technical, and scientific), and in consumer contact.

Well now we come to the last, and perhaps the most constructive part of this report.

Part III, the *denouement*, will attempt an ambitious objective—and a presumptuous one. It will suggest to working women how they can be more effective, better liked, go farther, be happier.

(Much of what follows on how-to-be-successful-though-a-woman consists of counsel on how to dispel erroneous preconceptions about women in responsible spots.)

The first general advice might well be to demonstrate the qualities of a good boss. Determine that when you reach management there will be none of the peculiar problems associated with women in administrative status. Try not to be the kind of woman men, and women too, resent working for—jealous, suspicious, exacting. Avoid justifying the belief that women are too tough in supervising other women. Be objective in your judgments, decisions, actions. Your prime responsibility as a good administrator is to your company.

Don't attach undue importance to your own assignment. True humility is a winning quality. De-emphasize the prestige factor of your job. To facilitate this, broaden your life on the outside. Don't blow up little things disproportionately.

Establish *rapport* if you can. Be empathic. When it is necessary to discipline, do so with assurance and authority, but without pettiness. Don't demand perfection. Avoid being emotional. Be outgoing and friendly so that your fellow supervisors will not stand critically aloof, expecting you to fail. Accept proffered assistance. Don't evince annoyance, irritation, or bitterness. Don't sulk. Avoid display of temperament.

Prove that you have the dollar value of a man. It is part of the mythology about women that a man is a better economic risk on his job than a woman. Regrettably it is not all mythological. You have a few counts against you from the facts on the record. But if, through fortune or fortuity, you prove to be one of the women chosen for real responsibility, so conduct yourself as to give the lie to this regrettable preconception.

Establish the sincerity of your interest in the job. Militating

A Campus-to-Career Case History

"The future looks unlimited"

"I wanted a career that offered variety, opportunity and a chance to work with people," says Lewis William Post, C.E., Michigan State, 1950. "So I chose the telephone company.

"My initial training—two full years of it—probed every phase of company operations and acquainted me with all of the jobs in the Plant Department, where I was starting.

"Today, as Plant Engineer, I'm responsible for preventive maintenance of all field equipment, installation of new facilities for wire and cable, and I work with architects and builders on telephone needs in new buildings.

"Selling's part of my job, too. I sell ideas—like the wisdom of planning for telephone service when you're building. Recently I advised an architect and an owner on telephone wiring and outlets in a new $160,000 medical center. I enjoy getting in on the ground floor of such projects and making contributions both as a civil and a telephone engineer.

"In my area of Chicago there are 80,000 telephones, home and business. More are being added every day. There's expansion everywhere in the telephone business—all across the country. To me, the future looks unlimited."

Lew Post's career is with Illinois Bell Telephone Company. Many interesting career opportunities exist in other Bell Telephone Companies, Bell Telephone Laboratories, Western Electric and Sandia Corporation. Your placement officer can give you more information about them.

Bell Telephone System

against your acceptance at the supervisory or administrative level is the feeling about the irresponsibility of women in the office; the resistance, for example, of young college women to routine, and their casualness in chucking the job for a trip to Europe or for another "more glamorous" assignment. Be you a beaver of the eager species. Pay attention. Be an intelligent listener. Forget the clock—if you really want to succeed in business, that is. Don't comment when you see your boss go out nightly with a bulging briefcase, "I'm glad I don't have to do that." Do it! Imitate your male counterpart. Occasionally do part of your job on the dining room table at home. Be an "organization woman" —to borrow and corrupt the characterization William White, Jr. of *Fortune* magazine is popularizing with his new book.

Don't be afraid to assume responsibility. Take it on as naturally and as effectively as you would go about directing household servants in preparing for a dinner party. Manifest the same assurance, the same poise and grace, in your supervisory duties as you do in seating your dinner guests. Don't resist the lead assignment in fear that in directing others you will jeopardize your social acceptance. Be a little hard-shelled—without, of course, allowing your instinctive sensitivity to people and their problems to atrophy. Relinquish, in a degree, your feminine tradition of aloof dignity and self-effacement. Don't be a reluctant dragon. Don't be too recessive. Don't be too dynamic either. It's a hard row to hoe, gals. This whole business was summarized neatly by a personnel director (male) in Chicago. He said:

> "Once a woman has found her level and established herself, then to be a success in management all she has to do are four things: Look like a girl; think like a man; act like a lady; and work like a dog!"

If you lose the ability to get along with people you are washed up. Nine out of ten reasons for failure in business—and this comment would be as applicable to women as to men—are attributable to some defection in interpersonal relations. Only one failure in 10 is concerned with a lack of technical qualification. The trick in supervision is to evince an understanding of human problems, while still exhibiting a strong personality.

Being a good boss or a bad one is not a matter of sex. One of either gender who has a strong sense of assurance, of personal security, is likely to supervise effectively, in part because he or she has no sense of competition—no tendency to take reactions personally. Be adjustable in every respect. If progress requires a shift in your operations base, be flexible. Don't be geographically myopic.

Names Leadership Features

What features will distinguish tomorrow's woman business leader —set her apart as one capable of a special contribution?

When woman gains her rightful place on the business scene, she will exhibit a unique kind of maturity—gained as a result of a century of taking it on the chin and coming up smiling. Her responses will be objective. Moreover, they will be controlled and expressed in ways which are socially acceptable. Her psyche will not scar easily. She will be tactful in her defense of what she considers right.

She will have direction and decisiveness. She will not get bogged down in detail. The forest, as well as the trees, will be ever before her. Her goals will be in focus—her energies abundant and directed.

She will be adaptable. There will be no deadly preconceptions—no complacency. She will be in tune with the times—flexible in dealing with new problems.

Like her male contemporaries, tomorrow's female business leader will have more formal education than her predecessors. Management is assuming professional stature. A broad cultural base and ample technical knowledge will be requisite for her.

She will evince enthusiasm and humor. Without the first she would not have the full portfolio for leadership. Lacking the second, she could not survive the pressures, the tempo, the vicissitudes of modern business. She might develop a fatal brittleness.

She will be a model of humility and graciousness. She will have a highly developed sense of service. Sincere interest in the personal problems of her people will be instinctive. She will not be patronizing. Her gracious greetings and thoughtful acknowledgements and observances, her social poise, will constitute a model for her company's management team.

She will have imagination and vision.

The expanse of the view of tomorrow is breathtaking. It is too broad for sex discrimination. Tomorrow's leaders will have the mind of youth and the heart for adventure. Women, as well as men, have youthful and adventuresome spirits. Women, perhaps even better than men, can meet the challenge of change.

Finally, and perhaps most significant of all, she will possess certain spiritual qualities.

Woman through the years has symbolized purity, justice, and liberty—all ingredients of a higher plane of thought than is sometimes manifested in business. Her intuitiveness and sensitivity are related to an inherent spirituality.

Her influence on the moral tone of business conduct up to now has been less direct than indirect. She has inspired the men who are industry leaders to comport themselves in a seemly and moral fashion. As she moves into key positions herself, her impact on the ethics of industry will be more directly felt —more profound.

The legacy which women will bring to the world of commerce will be important . . . rich.

Twenty-two million women are on the job and in line for promotion. Today many must do twice the job for half the recognition. It will not always be so. America has reached a point where women are indispensable in the national economy. MAY IT BE EVER SO!

Guidance Counsellors:

ARE YOUR STUDENTS AWARE OF THE PROFESSIONAL PROGRAMS OFFERED BY THE ARMY MEDICAL SPECIALIST CORPS?

YOUR STUDENTS studying dietetics, physical therapy or occupational therapy will want to learn of the unlimited professional, educational and personal opportunities offered through four distinguished programs of the Army Medical Specialist Corps. To aid you in your counseling responsibilities, the Army has prepared free guidance booklets giving all the details of the programs described briefly below. In sending for these booklets, you will not only serve your students but will help the AMSC in its mission of providing the best medical care to America's military personnel.

Student Dietitian Program: This program enables students majoring in Foods and Nutrition or Institution Management to finish their education without financial worry. After completion of either the sophomore or junior year, students enlist in the Women's Army Corps, U.S. Army Reserve, and receive over $200 per month until graduation.

Dietetic Internship: This 12-month internship, enabling a young woman to qualify as a hospital dietitian, is approved by the American Dietetic Association. Conducted at Walter Reed Army Hospital, Washington, D. C., it gives the intern experience in both the administrative and the therapeutic phases of dietetics.

Physical Therapy Course: Upon satisfactory completion of this 12-month course, the graduate is eligible for active membership in the American Physical Therapy Association. The first phase of the course is conducted at Brooke Army Medical Center, Fort Sam Houston, Texas, where the student learns the fundamental sciences and skills of her profession. The second phase of clinical instruction and practice is conducted at one of three Army teaching hospitals.

Occupational Therapy Clinical Affiliation: This program can include the following: clinical application of occupational therapy in the treatment of patients with physical disabilities (12 weeks); neuropsychiatric disorders (12 weeks); general surgical and medical conditions (4-8 weeks); tuberculosis (4-8 weeks). The affiliation is scheduled in one or more Army hospitals and meets the standards established by the Council on Medical Education and Hospitals of the American Medical Association.

The latter three programs enable students to reach their professional goals without financial worry, for they enjoy the rank, pay and privileges of commissioned Second Lieutenants in the Army Medical Corps, Army Reserve.

U. S. ARMY
Medical Specialist Corps

Send today for your free booklets giving full details on these outstanding professional programs. Remember, you will be helping both your students and your country. Simply clip and mail this coupon.

JCPA-12-57

THE SURGEON GENERAL
Department of the Army
Washington 25, D. C.

Attn: Chief of Personnel

Please send me free guidance booklets concerning the Army Medical Specialist Corps' Student Dietitian Program, Dietetic Internship, Physical Therapy Course and Occupational Therapy Clinical Affiliation.

Name_____

Address_____

City_____ State_____

Number of copies desired_____

Organization_____ Position_____

THE IMPACT OF GOVERNMENT

Continued from page thirty-six

8%; and 1950–11%. For the past several decades these investigators found that the proportion of the graduates that obtain degrees in engineering and science has remained around 18 to 22%. Their prediction for 1970 is that 22.2% of the graduates will take degrees in engineering and science. Further, the best estimates they have indicate that only one-third of the scientists and two-thirds of the engineers tend to stay in their technical fields.

They consider that these trend ratios will hold, for purposes of prediction, at least through 1979, and can be applied to accurate calculations as to how many 22-year-olds will appear each year up to that time. From 1979 to 2000, calculations are based on the census bureau's estimate of future population.

On this basis, and with adjustment for losses due to death and for retirement at sixty-five, they picture a curve which forecasts that we will have about 1,700,000 engineers and scientists in the working population by 1980, 3,300,000 by the year 2000.

As to our nation's need for scientific, technical, and professional talent, these gentlemen point out that at the beginning of the 20th century there were about 1800 persons in the United States for each working scientist or engineer. By 1950, the ratio was about 300 to 1. Assuming this trend continues, they predict we shall need by 1980 a number of scientists and engineers in the ratio of 1 to every 90 persons. This means, they predict, we will need—by 1980—a number somewhat short of 3,000,000 as compared with the 1,700,000 they estimate we will have.

The National Science Foundation figures indicate that in 1955 the U.S. had 1,536,000 first-level degree graduates in all scientific fields (of which 575,000 were engineers). This is 164,000 less than the 1,700,000 I quoted for 1980—15 years later.

Therefore, for purposes of this discussion, it seems safe to conclude that the supply and demand, present or forecasted, presents no real problem for the college seniors and graduates. The principal problem of the college placement officer will be to continue to improve the administrative procedures and techniques for getting his candidates appropriate consideration, in order to confront the graduates with the best possible opportunities and choices for initial employment.

Further, it seems reasonable to conclude at this point that neither the impact of government spending cutbacks, in particular, nor the general supply and demand aspects of our economy which may affect college placement, have any real significance in connection with the outlook for our college graduates in the immediate future. This is not the real problem! The college graduate should do all right.

The real problem is, of course, an economic one. Actually, it is much more than that. It is profoundly social, economic, and political. The nub of the problem from the standpoint of employees, educators, and students emerges very clearly. One does not pursue any real extensive inquiry into the information available to establish that our society must make up its mind when and how it is going to substantially increase its investment (1) in the teaching profession; (2) in schools, primarily secondary schools; and (3) in financing the education of the fifty per cent of our youth who inherit the natural endowment essential for college education; yet who, for financial reasons and to some extent because of lack of motivation, are not able to get to it.

These problems, the selection of good teachers, the school problem, and the scholarship problem, get us into questions of more versus less Federal aid. This in turn raises the horrible spectre of taxation. And this tax problem, considered in relation to the cutback in Government spending, is precisely where we came in.

I think it may be useful at this point to pay some attention to the way in which we are orienting our graduates—career-wise.

Is there any way we can persuade our college students that with the market wide open—for years to come—there's something to be said for investing their time in getting the experience in their field, in developing their capability to practice what they have learned, and in continuing to learn by experience through the years of a solid career, compensated by a real sense of achievement? Can they learn to appreciate that the only real satisfaction comes from contributing to the progressive developments in their field—and not from chasing the next highest paying job? That today's odds for the graduate are that investment in solid experience in the right job and in the right direction for at least the first ten years is bound to pay off in the end?

What I am trying to say is that conviction and dedication to purpose, plus the capability of taking a calculated risk on one's own endowment do not represent for today's college graduate the kind of risk taken by the early pioneers or by the industrial entrepreneurs of yesterday. Yet, we seem to be orienting our young people toward primary concern for personal economic security, rather than for real achievement in the field of their choice.

In the AEC we have a Junior Management Development program, nothing unique about it, as part of the Government program to introduce into its organizations and to develop the administrators of tomorrow. The Government picked up the idea from progressive industries.

We find, however, that if we

don't watch out, these JMD's get

answer questions. An educated

his job . . . he must put up or

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don't watch out, these JMD's get the "white-haired" boy or "crown prince" treatment. This is to be avoided because it's neither good for them nor for us. But the disturbing thing about some of these young men is that they expect this kind of treatment. Somehow we convey to them that we have assumed the primary obligation—to further their careers. Sometimes one suspects they brought to the assignment no real expectation that they have an obligation to pay off in a superior fashion in the job assignment they get. I suppose that the same thing may be true of similar Junior programs in industry.

Is our society producing a generation that's got "the gimme's?"

Admiral Rickover, that remarkable military professional who has steered the nation's program for nuclear propulsion of submarines and ships and who is legitimately concerned about the college crop of today and tomorrow, has said, speaking in 1955 of the thousand or more college graduates he had interviewed during the previous ten years:

> "The single most important thing I have learned from these interviews is that all but a small number of the young college graduates lack proper motivation. Some of them consider their degree merely as a ticket to a job, and a pass for security. They use the college as a 'service station.'
> "This desire for security in terms of money, rather than in opportunity for self-improvement, is hard to understand in a society where security is so readily available.
>
> "Another important point that has been made clear to me in interviewing young graduates is that they know many facts—but they have not learned many principles. Principles are more important than facts and far more difficult to master. But once a principle is learned it becomes a part of one and is never lost. The facts we learn are soon forgotten and their meaning changes with time. A trained man knows how to answer questions. An educated man knows what questions are worth asking.
>
> "I do not believe that 'practical stuff' should be or can be properly taught in a university. The reason is easy to see. Nearly all college textbooks are several years behind current industrial practice. Furthermore, they are written by men who do not have the latest 'practical' information, so that the texts are obsolete even while they are being written.
>
> "The employer who wants a 'practical' engineering graduate is simply hiring a man who knows how to make the same mistakes that have been made in his plant for the past ten to fifteen years."

How do we and our college people get this way?

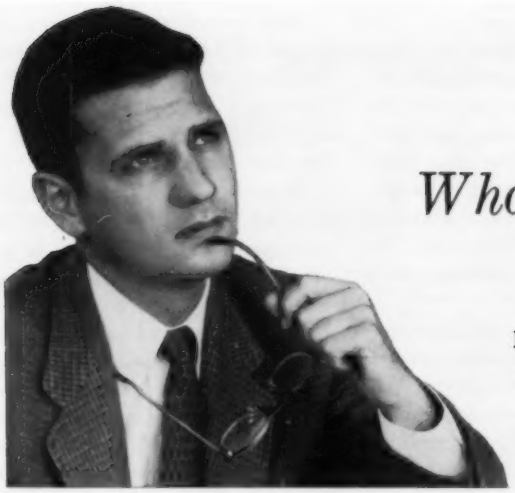
Who Has What "Ism"?

Just to point up this aspect of our social-economic problem as it relates to human motivation, may I quote the exceedingly provocative news article by Jim Lucas, Scripps-Howard Staff Writer, syndicated under a Washington, D.C., dateline, October 11, 1957. Under a caption which states "Russia Goes Capitalistic to Take First in Space Race" Lucas quotes one C. L. Zakartchenko, born in Russia, a naturalized U.S. citizen, who served as interpreter for the Soviet satellite scientists who were in this country when the Russians launched Sputnik. Zakartchenko, a former engineer director at a Naval Ordnance Experimental Unit, played a major part in development of the U.S. Navy's petrol-guided missile. He is quoted as follows:

> "From conversations with the Russian scientists, Zakartchenko said he was convinced they launched their satellite for 'less than half' the money we have spent on a program which is yet to produce results.
>
> "The Russians did this, he said, under a system by which 'men work under pressure and competition, successes are rewarded and failures penalized, so that a man must produce to keep his job . . . he must put up or shut up'.
>
> "Under the cost-plus-fixed-fee arrangement in this country, he said, 'there are no pressures, no incentives, no competition, no such thing as failure because the Government shovels out more money to cover up for the inefficient'.
>
> " 'Money won't solve our problem', Zakartchenko said. 'In fact, our trouble is too much money'.
>
> " 'Under our system,' he said, 'an efficient operator is actually penalized because he will make no more profit than one whose costs are out of line'. He also criticized Civil Service which does not recognize merit.
>
> " 'You can be sure that the Soviet scientists who put their satellite up will be handsomely rewarded with seaside villas, lifetime pensions, and the best of everything a grateful nation can give them', he said.
>
> " 'And they would have been penalized had they failed. If we had won, the most our people could have expected was another citation from the Secretary of something or other. It is ironic that the Communists have gone over to the incentive system while we have gone socialist'."

The resolution of all the problems relating to the supply and demand aspect of the search for brainpower inevitably comes back to possibilities of political actions to be considered by our citizens in the workings of our democratic society. And such political actions in turn tend to involve, in the end, administration by the Government one way or another. And therefore, before concluding this discussion, I should like to say something about the future needs of the Government for administrators and managers, and the career possibilities in Government for college-trained personnel.

In our earlier discussion of the cutbacks in Government spending, we emphasized that the cost reductions involved are essentially marginal. It is evident that, how-



What would happen, if . . . ?

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ever marginal the costs we are cutting back, they do represent a "make or break" factor in seeking a balanced national budget; and possible tax relief. Yet, such prospective loss of Government spending also appears to be regarded by industry as representing a significant "make or break" factor in relation to continuity of our levels of employment. We add, then, to these considerations, the consideration of our general preoccupation as citizens for better pay and personal economic security. Now consider that the only foreseeable solution to the problem of getting more teachers and more schools is more public money and, therefore, more taxation.

Great Capabilities Needed

No one knows how we are going to balance all this out. But one thing is increasingly certain—we are going to need more and more personnel with management capabilities of an exceedingly high order.

In a recent report to executives on the "Shortage of Brainpower" the magazine *Business Week*, speaking of industry's need for college-trained people, states, "You start with the people who create new ideas, the scientists — and they're desperately short. Then you need people to engineer these ideas into things or processes—and they are also in short supply.

"The next step calls for men who can assemble, organize, and direct the people and the money and the equipment for getting the engineered ideas into production. And managers—especially those able to see how all parts of the process can best be put together—are mighty scarce."

Take this concept of being able to see "how all parts of the process can best be put together" up to the top levels of our fabulously complicated Government—the level of the President, his Cabinet and their department heads and immediate subordinates.

The stringent Government budget position arising out of the nation's inflationary spiral, and the need for managers with large-scale perspectives, add up to the need for "cost conscious" management, up and down the line. Zakartchenko observed in the article quoted that the possible impact of cost-plus-fixed-fee industrial operations as a basic motivation of industrial management minimized incentive for real competitive effort—eliminated the element of really utilizing one's management capabilities.

On the Government side, consider that since the depression period during the thirties, and during the war period, and since the war during a period of critical defense spending, our Government has operated on a deficit-spending basis. We have been compelled to borrow on our future productive capability in order, literally, to stay alive. We "stayed alive" as a going economy during the depression, and we have "stayed alive" as a free nation during and since the war.

No one really doubts that there must be some kind of a "firmament" (as one Government executive has called it) above the relative capability of our country to produce and spend. Complex as is the economic problem, we know we must balance off somehow at some relative level.

Government administrators, developing and maturing during these periods when, money-wise, the purse strings have always been open, cannot reasonably be expected, quite suddenly, to know how to operate under limited budgeting. They were compelled to plan appropriate ways of pouring money into the economy during the depression; or to get things done regardless of cost during the war when everything, including human life, was expendable; or to "buy time" during the post-war period in developing and producing super-weapons in order to forestall a third war. When it comes to economy in operation, such administrators, in the main, have not been conditioned to think and act in terms of low-cost operations. Nor can they reasonably be expected to become, overnight, strictly cost-conscious in their approach to the planning, organizing, coordination, and review that makes for cost-conscious management. This is one of the problems of achieving "unification" in our military establishment. It involves coordinated and not competitive spending by the Government as a whole.

Perhaps it should be recognized that we have in Government—and perhaps in industry—a whole generation of administrators conditioned and trained in the business of planning to spend under circumstances where the purse strings have had to be rather generously open. We must now re-condition them, and introduce and develop a new generation of administrators capable of cutting the pattern to fit the cloth —administrators who have learned to operate on a cost-conscious basis.

Many Opportunities Remain

Thus, there appear singular opportunities for college-trained brainpower, interested in looking for challenging careers and for growth and development toward filling this immediate and future need for "new day," "cost-conscious" administrators in Government—and in industry, too.

To sum up then, we have no problems in college recruitment and placement that we haven't been living with, and thereby gaining valuable experiences in their handling. The college graduate need have no fears about getting a job; though there may be good question as to how well he chooses to invest his time during his first ten years of experience.

The tangible problem that faces us in connection with future crops of college graduates has to do with more teachers, more schools, more scholarships.

But the intangible problem—profoundly social, economic, and political—remains:

Whether we can continue as a democratic nation to find the right balance in attaching priority to the things we find of value so that we can at once retain our independence in enterprise, both personal and industrial, as well as support and receive essential Government-financed social services.

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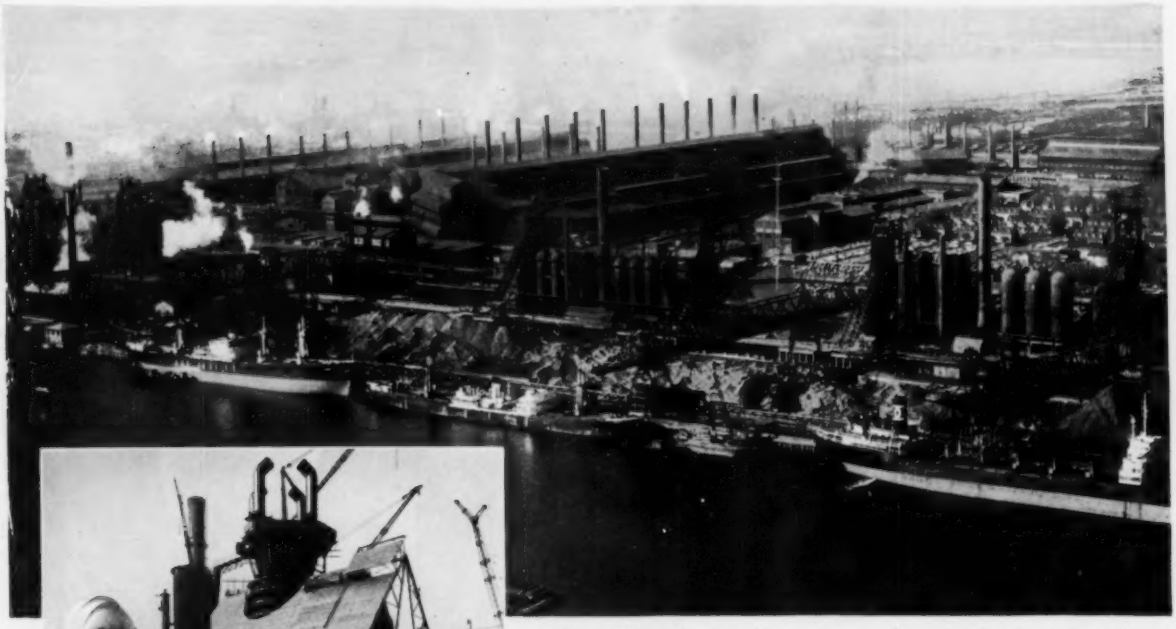

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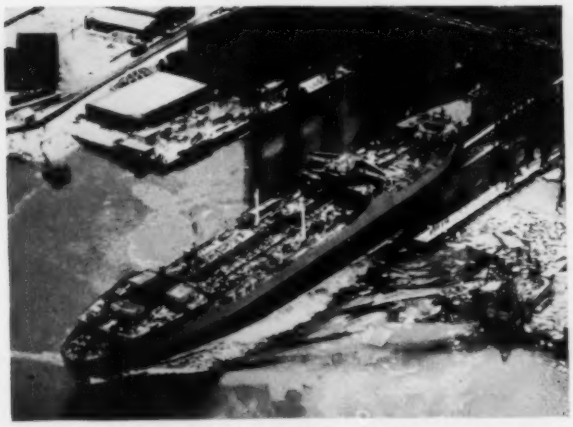

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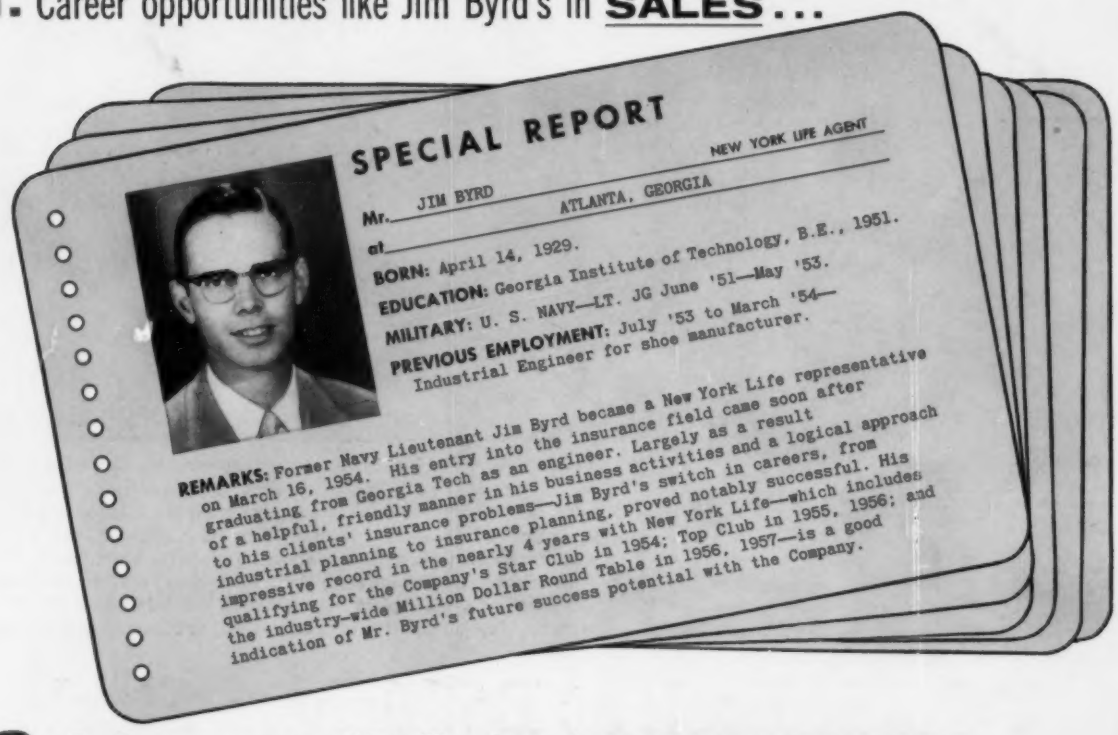

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MILITARY: U. S. NAVY—LT. JG June '51—May '53.

PREVIOUS EMPLOYMENT: July '53 to March '54—Industrial Engineer for shoe manufacturer.

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